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AUGUST 18, 1952

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Vol. 133, No. 7 August 18, 1952

RAILWAY AGE

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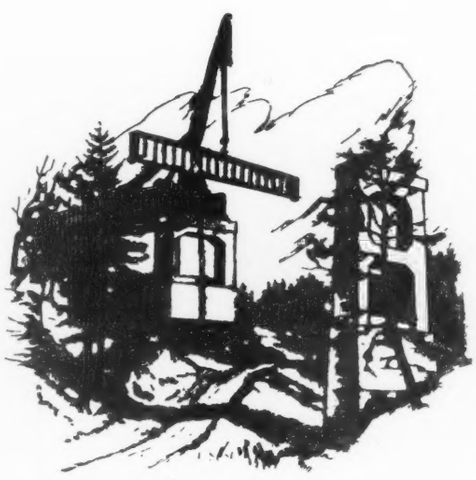
WEEK AT A GLANCE

CURRENT RAILWAY STATISTICS

Operating revenues, six months	
1952	$5,119,129,904
1951	5,035,567,042
Operating expenses, six months	
1952	$3,999,615,658
1951	3,964,143,107
Taxes, six months	
1952	$ 592,191,515
1951	572,438,812
Net railway operating income, six months	
1952	$ 441,832,593
1951	397,487,647
Net income, estimated six months	
1952	$ 290,000,000
1951	260,000,000
Average price railroad stocks	
August 12, 1952	64.03
August 14, 1951	53.16
Car loadings, revenue freight	
31 weeks, 1952	21,505,048
31 weeks, 1951	23,725,022
Average daily freight car surplus	
Week ended August 9, 1952	10,257
Week ended August 11, 1951	3,958
Average daily freight car shortage	
Week ended August 9, 1952	3,400
Week ended August 11, 1951	18,325
Freight cars delivered	
July 1952	5,402
July 1951	5,290
Freight cars on order	
August 1, 1952	95,265
August 1, 1951	144,810
Freight cars held for repairs	
July 1, 1952	105,255
July 1, 1951	93,866
Net ton-miles per serviceable car per day	
May 1952	973
May 1951	1,038
Average number railroad employees	
Mid-June 1952	1,224,363
Mid-June 1951	1,295,570



In This Issue . . .

A NEWS REPORT—believed to be the first one ever made on the subject—on possible applications of commercial television to railroad operation begins on page 52. This report is a more detailed and fully illustrated account of the commercial television tests which, as briefly noted on page 11 of last week's issue, were conducted at the Baltimore & Ohio Chicago Terminal's Barr yard near Chicago on August 5. The tests, using a newly developed small-size camera, covered inspection of running gear, taking of car numbers from inbound leads and the overseeing of general yard operations from yard towers, They were sufficiently encouraging to justify a more general demonstration, which will probably be held early this fall.

WHAT'S THE SCORE? How is your railroad doing as to revenues, expenses, operating ratio and net railway operating income, as compared to what it did a year ago, or as to what other railroads of its size or in its territory are doing? The answers to those questions are readily obtainable from the tables of railway revenues and expenses for June and the first six months of 1952—a regular monthly feature, which begins in this issue on page 23.

MAYBE THE UTILITIES have a rate-making plan which the railroads might advantageously copy! There are many similarities between the two industries, but one major difference is that the utilities, by and large, are prosperous, while the railroads are not. One big reason for the comparative prosperity of the utilities appears to be their approach to the rate-making problem, which boils down to a charge for capacity, plus a charge for service. Why, therefore, shouldn't the railroads consider basing their freight rates on a charge per car, *plus* charges per hundred pounds of commodity transported? This interesting thesis is explored in detail, with two simple explanatory charts, by J. A. Bliss, I. C. C. practitioner and transportation economist, in the article which begins on page 39. Obviously, Mr. Bliss' suggestion is a long-range approach to the rate problem; not the type of immediate answer which the railroads have been forced to seek in the various ex parte rate increase cases.

In Washington . . .

BRIGADIER GENERAL ANDREW F. McINTYRE, who recently returned to his civilian position as chief of freight transportation of the Pennsylvania (Railway Age, July 7, page 164), has been awarded the Legion of Merit for his service to the Army from July 1950 to June 1952, when the Army

was operating the nation's railroads. During the period of government control Gen. McIntyre served as assistant chief of transportation for railroad operation under Major General F. A. Heileman, chief of transportation.

A TOTAL OF 1,915 PROJECTS FOR CONSTRUCTION of surface transportation, warehousing and storage and port utilization facilities, with an aggregate value of $884,772,806, have been approved by the Defense Transport Administration for the five quarterly periods between October 1, 1951, and December 31, 1952. Geographically, New York leads in number of projects, with 162, followed by Illinois, 155; Pennsylvania, 138; Ohio, 137; California, 116; and Texas, 110. New York also leads in total value of projects—$202 million, with Pennsylvania second—$107 million, and Louisiana third—$79 million. Projects include highway and waterway as well as railway undertakings.

EXECUTIVE AIRCRAFT—small planes maintained by business firms for use of their executive officers—are said to be rapidly gaining in popularity. The Wall Street Journal reports that the number in use increased from about 8,000 to about 9,500, with a total of around 40,000 seats, within the past year. Saving in time for traveling executives is usually the big reason for this use of the small planes, but the money saving is also reported to be an attractive feature, especially when three or four men are traveling together.

EVERY YEAR SINCE 1915 the Interstate Commerce Commission has issued indices which reveal the general trend of costs incurred by railroads in various types of necessary construction work. Indices for 1951, not unexpectedly, are the highest of the entire series, the weighted overall average being 307, an increase of 19 points over the previous high of 288 in 1950. The figures, published on page 56, are assembled by the commission's Bureau of Valuation, which is headed by George S. Douglass, above.

THE RAILROADS RECEIVED LESS MONEY than the air lines in 1951 for carrying approximately 15 times as much first-class mail. The figures, taken from an Air Transport Association of America release, derived from the Post Office Department's 1951 cost ascertainment report, show that the railroads in that year were paid $35,870,973 for carrying 16,492,934,239 pieces and 235 billion pounds of first-class mail. The airlines one the other hand, drew down $39,407,519 for carrying 1,069,034,236 pieces or 45.5 billion pounds.

IT IS COSTING $24,610 to resurface the mile-long section of U. S. Route 301 which was used during 1950 and 1951 for the Maryland field tests which demonstrated the amount of highway damage caused by heavy trucks (Railway Age, May 19, page 11). That is in addition to $9,918 spent for preliminary repairs before the test section was reopened to general traffic last fall—a total of $34,528 to maintain the one mile of highway that was used to prove what common sense already indicated, i.e., that heavy trucks do damage roads!

SOME OF THE INEVITABLE "BUGS" in the Post Office Department's widely publicized program of transferring short-haul mail from rails to trucks appear to be coming to light as the program is expanded. One involves acquisition of adequate terminal facilities, which appears to mean, in some cases, building or leasing space outside of present federal buildings. Either way is going to cost money — and to that extent will reduce the "savings" alleged to result from the program. Reports have also been heard of "renegotiation" of mail truck contracts, at rates above the rail level and in some instances for substantially poorer service.

Transport Corps' Traffic Men Can't Be Entertained

Personnel of traffic management divisions in the Office of the Chief of Transportation of the Army have been forbidden to accept "gratuities or entertainment proffered by representatives of the transportation industry." Executives of the industry were so advised in an August 1 letter from Colonel S. R. Browning, assistant chief of transportation for traffic.

Instructions issued to the Army personnel involved "prohibit acceptance . . . of any favor, the cost of which is assumed by an individual or organization engaged in providing transportation services to the Department of the Army," Colonel Browning's letter said. It added that exceptions would be made in instances where requests are made to the chief of transportation for attendance of individuals as "official guests or speakers at social functions." The letter also said:

"The traffic management divisions of the office . . . control or influence the procurement of transportation services costing one-half billion dollars per year. In a defense economy the equitable and economical distribution of this traffic is of vital interest to the public as taxpayers and to each carrier. As you well know, no fixed formula has or can be devised which, if followed, will result in a suitable distribution of traffic. Consequently, judgment must always be a factor in the routing of traffic.

"After consideration of these factors, I have come to the conclusion that our moral obligation can only be discharged by strict adherence to a policy placing our employees above suspicion. Such a policy leaves no room for individual interpretation and protects both the individual and the government. I sincerely hope the industry representatives will accept this policy in the spirit in which it is promulgated and cooperate in its implementation."

Break Ground for "Air Rights" Skyscraper

Construction of the 41-story Prudential building, which is to rise above the Randolph Street station of the Illinois Central in downtown Chicago, got under way on August 12 with appropriate ground-breaking ceremonies.

Chicago Mayor Martin H. Kennelly and Valentine Howell, executive vice-president of the Prudential Insurance Company, removed the first shovelsful of earth at the site of one of the main caissons on which the building is to be erected. John M. Trissal, assistant chief engineer of the IC, spoke briefly, as did Mayor Kennelly and Mr. Howell. Mr. Trissal pointed out that the road's electrified suburban service would continue uninterrupted during construction of the new building which, ultimately, would bring a new influx of commuters into the station.

Mr. Howell termed suburban service "the perfect illustration of the difficulties of the peak-load problem." "You all know how hard it is," he continued, "for railroads to break even on suburban traffic, much less make any money from it. Yet if this vital service is allowed to starve to death from lack of adequate revenue, the result is bound to be trouble and dissatisfaction for the traveling public." Mr. Howell suggested that city subsidies to suburban service roads might prove of benefit to the city in the long run.

Speaking of its transportation, Mayor Kennelly said Chicago is in "no danger of dying from hardening of the arteries, nor from any disease of the circulatory system."

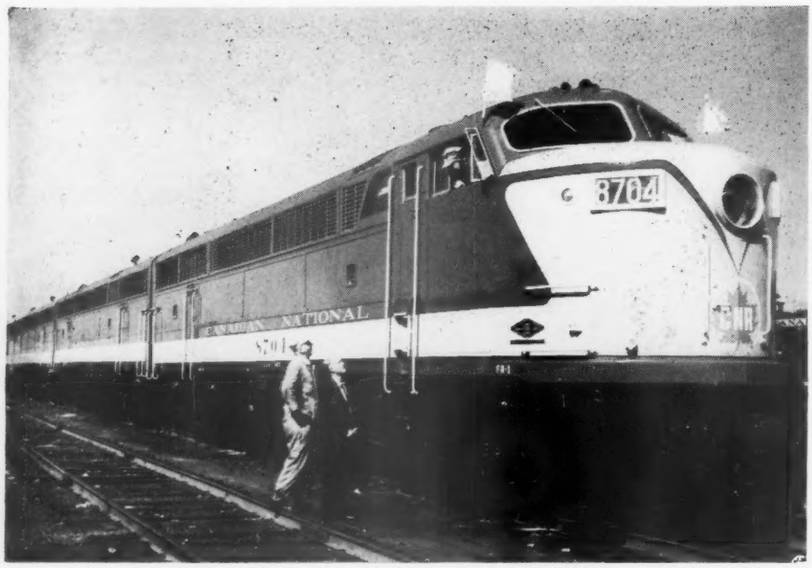
The 600-ft. high building will serve as the "Mid-America Home Office" for the life insurance company, which will occupy the first nine or ten floors. The balance—an aggregate of one million square feet of floor space—will be rented. Actual excavation of the 260 caisson sites—which range in diameter from four to 11 feet—will be done by hand down a full 150 feet to bed rock. Architectural sketches of the building showing how it will appear over IC yards appeared in the March 12, 1951, *Railway Age*, page 92.

I.C.C. Approves Greyhound Purchase of UP Bus Lines

Acquisition by the Greyhound Corporation of the Union Pacific's bus operating subsidiaries has been approved by the Interstate Commerce Commission.

Under the acquisition plan, Greyhound will purchase Interstate Transit Lines and Union Pacific Stages, and it will also get Interstate Transit Lines, Inc. The latter's stock is among the Interstate Transit Lines' assets which will be transferred.

Greyhound already owns 33.33 per cent of I.T.L.'s common stock. The UP owns 51 per cent, and the Chicago & North Western 15.67 per cent. Greyhound has also had a 33.85 per cent interest in Stages, where the UP's interest has been 66.15 per cent. Transit, Stages, and Transit, Inc., conduct a



THIS CANADIAN NATIONAL four-unit, 6,400-hp. diesel-electric locomotive was delivered recently by the Canadian Locomotive Company. Bob Dixon (left), master mechanic, and H. D. Turnbull, engineer, diesel equipment, are shown discussing the locomotive's performance with Engineman Hugh Foss. The units are scheduled for service on CNR lines between Montreal and Toronto, and between Montreal and Chauvigny, Que.

unified single operation, under the trade name of Overland Greyhound Lines, between Chicago on the east, and Los Angeles and Portland, Ore., on the west.

The transactions approved by the commission contemplate Greyhound's acquisition of the UP and C&NW interests for an aggregate consideration of about $8,566,000. The UP will get 17,897 shares of a new issue of Greyhound 4½ per cent, cumulative preferred stock, and about $5,000,000 in cash. The C&NW will get 4,350 shares of the new stock, and about $1,240,000 in cash.

The commission's report requires that the acquisition plan's proposal to merge Transit and Stages into Greyhound be consummated promptly. "Our findings," the report said, "are not to be construed as authorizing acquisition of control through purchase of stock without the merger being effected."

The report, by the commission's Division 4, was in No. MC-F-5190; and it embraced also Finance Docket No. 17736, which involved Greyhound's application for authority to issue the preferred stock required for the acquisitions. That application was granted. The majority report represented the view of Commissioners Mahaffie and Johnson. The division's third member, Commissioner Patterson, dissented.

B&M Ordered to Cut Commutation Fares

The Interstate Commerce Commission last week ordered a cut in interstate commuter fares of the Boston & Maine. The commission found that a 66-2/3 per cent increase authorized last October was too much, resulting in greater revenue losses.

New fares prescribed by the commission will amount to a boost of 30 per cent over the rates in force before the 66-2/3 per cent hike was granted. The latter has been in effect since October 25, 1951. The road has until August 30 to revise the fares downward.

Most B&M interstate commuter business is between New Hampshire and Massachusetts. The commission said losses from this service since last October are the result of fares "higher than the traffic may be expected to bear."

After last year's I.C.C. decision, the Massachusetts Department of Public Utilities allowed only a 25 per cent increase in intrastate commuter fares of the B&M. As a result many New Hampshire residents formed car pools to drive to Massachusetts points and obtain the lower intrastate fare to Boston.

Transportation Corps Revamps Traffic Setup

Organization changes designed to provide for "better coordination of traffic management with operations at a policy level" have been made in the Office of the Chief of Transportation of the Army. The changes became effective August 1.

They involved the appointment of Colonel Samuel R. Browning as assistant chief of transportation for traffic, with Colonel John T. Goodley as deputy assistant chief, and the discontinuance of the office's Commercial Traffic Service Division.

The latter's functions have been divided among three new divisions—Passenger Traffic, headed by Lieutenant Colonel G. S. Zinnecker, Freight Traffic, headed by Colonel F. T. Edson, and Traffic Services, headed by Lieutenant Colonel E. D. K. Hoehne.

"The assistant chief of transportation for traffic will provide policy guidance on traffic management to the new . . . divisions," an Army announcement said. It also said that the new setup "will permit more expeditious conduct of business by the traffic divisions. . . ."

D.T.A. Reports Apprentices Can Get Draft Deferment

The Defense Transport Administration's Manpower Division has issued a pamphlet describing requirements and procedures by which industry apprentices may qualify for deferment from Selective Service. The pamphlet is entitled D.T.A.-Manpower No. 5, "Deferment of Apprentices."

Selective Service regulations were amended by President Truman on June 27 to provide for deferment of "qualified industry apprentices." According to D.T.A., only apprenticeship programs in existence for at least one year, and which are "soundly sponsored and properly certified," will be eligible under this program.

I.C.C. Taken to Court On Temporary Truck Rights

The Interstate Commerce Commission has been taken to court in the case involving its determination that temporary trucking rights suffer proportionate shrinkage when there is a curtailment of basic "permanent" rights to which they are definitely tied.

The commission's determination was made in No. MC-200 (Sub-No. 60TA), the report involved having interpreted temporary authority held by Riss & Co. for truck transportation of explosives over various routes. (*Railway Age*, June 16, page 16.) Riss appealed to the federal district court for the Western district of Missouri which has issued a temporary restraining order, staying implementation of the commission's ruling.

45% Increase in Suburban Fares Requested by IC

In keeping with the conclusion reached in its recent series of advertisements discussing the increasing losses being incurred in its electric suburban service (*Railway Age*, July 28, page 14), that "the fairest way to obtain the necessary revenues [to offset these losses] is to have all patrons share the increase equally in proportion to their present fares," the Illinois Central has made formal application to the Interstate and Illinois Commerce Commissions for a 45 per cent increase in suburban fares, to apply uniformly on all types of tickets.

This announcement follows by just nine months the application of a previous fare increase on November 1,

1951. Wayne A. Johnston, IC president, pointed out that the 1951 fare increase arose out of a lengthy suburban fare case initiated in 1949, and that the increases received reflected 1949 revenues and expenses.

New "Railway Accounting Rules" Will Be Issued

The next edition of "Railway Accounting Rules," which is published by the Accounting Division, Association of American Railroads, is expected to be available for distribution about the middle of next month, according to an announcement by Division Secretary R. E. Keefer. The edition, known as the October 1, 1952, edition, will supersede on that date the presently-effective October 1, 1951, edition.

Mr. Keefer's announcement said that one copy will be furnished without charge to each accounting officer who is a member of the Accounting Division. Additional copies may be obtained by member roads and their employees for $1 each. The price to non-member roads and others is $2 per copy. Orders should be placed with Mr. Keefer, Transportation building, Washington 6, D. C., with remittances made payable to the A.A.R.

Drouth Relief Rates Authorized by I.C.C.

The Interstate Commerce Commission on August 4 issued Drouth Order No. 46 which authorized railroads to publish, on one day's notice, reduced rates on hay moving to drouth areas designated as "disaster" areas by the Department of Agriculture.

The areas so designated when the commission issued its order were those embraced in the following states: Alabama, Arkansas, Georgia, Kentucky, Mississippi, Missouri, South Carolina, and Tennessee.

Waybill Study

Another waybill study has been issued by the Bureau of Transport Economics and Statistics of the Interstate Commerce Commission. It is Statement No. 5225, State-to-State Distribution of Carload Tonnage by Major Commodity Groups, 1950—Pacific States.

Kansas Intrastate Rates

The Interstate Commerce Commission has found that unjust discrimination against interstate commerce results from the Kansas Corporation Commission's failure to authorize intrastate rate increases in line with interstate advances approved in Ex Parte 168.

Specifically, the I.C.C. condemned the Kansas rates on livestock, sand, gravel and related articles, clay sewer pipe and drain tile, minimum charges per shipment, and minimum rates on shipments accorded pick-up and delivery service. At the same time it found that no discrimination results from the Kansas rates on cement, hay and sugar beets.

The commission's decision was in No. 30869. No order was entered, but the report served notice that there would be one unless the Kansas commission advised that it would permit the increases called for. Commissioner Splawn, concurring in part, agreed with the majority finding that there should be no increases in the rates on cement, hay and sugar beets; but he said the record provided no basis for the increases required.

Court Overrules I.C.C.; But Congress Did the Job First

A federal court at Tampa, Fla., ran second to Congress in the race to overrule an Interstate Commerce Commission determination to the effect that truckers of horticultural commodities were not exempt from regulation under the Motor Carrier Act's so-called agricultural exemptions.

The commission's determination was that the horticultural commodities involved (gladiolus and gladiolus bulbs) were not embraced within the term "agricultural commodities," as used in the exemption provisions. Carriage of "horticultural commodities" was added to the exempt trucking by an amendment which was enacted by Congress in the closing days of its latest session and signed by President Truman on July 9.

The Tampa court decision, which also set aside the commission's determination, was rendered July 23 by a special three-judge court. It noted the Congressional enactment and went on to make the point that the courts "have long defined the term 'agriculture' to include horticulture." The commission's determination was made in No. MC-C-968, and the court case was brought by the Florida Gladiolus Growers Association and other interested parties.

Changes in Practice Rules To Be Considered by I.C.C.

The Interstate Commerce Commission is ready to consider proposals for changes in its Rules of Practice. It issued an August 8 notice inviting interested parties to submit such proposals by October 1.

The notice by the commission's secretary, W. P. Bartel, was in Ex Parte No. 55, the proceeding out of which the present rules came. Consideration of a "possible revision" has been requested

Authenticated News

ENTRANCE TO SERVICE COUNTER in cafeteria car built by the British Railways as an experiment to lower food handling costs (*Railway Age*, June 16, page 86). Within the dimensions of a normal coach a complete cafeteria has been installed. Tables with tip-up seats are provided for 48 passengers. The interior is finished in plastic material with aluminum moulding. Tables, shelves and counters are also of plastic.

SP RESUMES SERVICE THROUGH TEHACHAPI, CAL.

Normal freight and passenger service is expected to be restored on the Southern Pacific's San Joaquin Valley line between Los Angeles and San Francisco on August 18. The line has been closed since July 21 because of severe earthquake damage in the vicinity of Tehachapi, Cal., where the line is also used by the Santa Fe.

A late report from the SP indicated that southbound passenger service was to be reestablished on August 17 and that service in both directions—freight as well as passenger—would be normal the following day.

Actually, several tunnels damaged by the quake will not be ready for service for some time. Service is being resumed over a temporary line that bypasses the most severe damage area. More than 1,000 men and 100 units of earth moving equipment of the largest types available are working 24 hours a day repairing four tunnels, "daylighting" two and partially "daylighting" another. The Morrison-Knudson Construction Company is working with SP forces.

by the Association of Interstate Commerce Commission Practitioners, and the request has "merit," Mr. Bartel said. He also recalled that the latest revision was made in September 1942.

As to submissions of proposed changes, the commission asked that interested associations get together on a consolidated presentation as they did in 1942. Meanwhile, "submissions from individuals are welcome."

After their filing with the commission, all proposed changes will receive preliminary consideration by the commission's Committee on Legislation and Rules, "acting in collaboration with an appropriate committee" of the Practitioners' Association, the notice also said. It added that, if the proposed rules changes are of sufficient importance, the matter will be made the subject of a proposed report to which exceptions may be filed.

Truckers Get I.C.C. Proposal For Commodity Reports

Division 1 of the Interstate Commerce Commission has advised Class I common and contract motor carriers that it has under consideration the matter of freight commodity statistics to be compiled and reported by the truckers. The advice came in a notice dated July 31 and made public August 13.

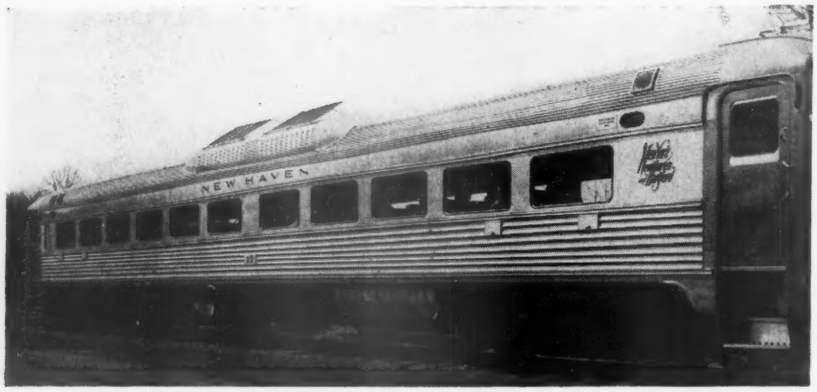
Accompanying the notice were the proposed reporting rules and the proposed list of commodity groups and classes. The latter is like the railroad list, there being 261 commodity classes.

The notice said that interested parties might submit to the commission written presentations with respect to the proposal. These presentations will be due September 30.

Individual returns filed pursuant to the proposed reporting requirements would not be open to public inspection, the notice also said. The commodity statistics reports of individual railroads are open to public inspection.

Freight Car Loadings

Loadings of revenue freight in the week ended August 9 totaled 782,171 cars, the Association of American Railroads announced on August 14. This was an increase of 49,251 cars, or 6.7 per cent, compared with the previous week; a decrease of 27,194 cars, or 3.4 per cent, compared with the corresponding week last year; and a decrease of 65,537 cars, or 7.7 per cent, compared with the equivalent 1950 week.



DELIVERY OF 32 BUDD RDC cars recently ordered *(Railway Age*, June 16, page 75, and August 11, page 15), added to eight already in service, will make the New York, New Haven & Hartford the largest single user of the self-propelled units. The eight now in service are being operated in the Boston, Providence, Cape Cod, Worcester, New London areas; six of the 32 on order are for the Naugatuck Valley line, between Bridgeport and Winsted.

CAR SURPLUSES, SHORTAGES

Average daily freight car surpluses and shortages for the week ended August 9 were announced by the Association of American Railroads on August 14 as follows:

	Surplus	Shortage
Plain Box	1,154	1,323
Auto Box	977	17
Total Box ...	2,131	1,340
Gondola	2,347	1,127
Hopper	0	772
Covered Hopper	0	19
Stock	1,666	15
Flat	52	127
Refrigerator ...	3,449	0
Other	612	0
Total	10,257	3,400

Loadings of revenue freight for the week ended August 2 totaled 732,920 cars; the summary for that week, compiled by the Car Service Division, A.A.R., follows:

REVENUE FREIGHT CAR LOADINGS

For the week ended Saturday, August 2

District	1952	1951	1950
Eastern	114,640	135,123	148,425
Allegheny	128,399	168,356	169,410
Pocahontas	54,095	64,508	61,163
Southern	118,839	122,880	127,369
Northwestern ..	137,474	140,252	138,647
Central Western	119,667	122,417	129,042
Southwestern ..	59,806	59,852	63,374
Total Western Districts	316,947	322,521	331,063
Total All Roads	732,920	813,388	837,430
Commodities:			
Grain and grain products	59,513	55,719	56,754
Livestock	6,968	7,254	7,335
Coal	126,756	142,324	151,061
Coke	7,269	16,570	15,157
Forest products .	48,887	49,634	49,462
Ore	71,378	89,683	78,534
Merchandise l.c.l.	71,409	72,207	85,862
Miscellaneous ..	340,740	379,997	393,265
August 2	732,920	813,388	837,430
July 26	607,271	820,476	845,011
July 19	608,957	805,378	830,076
July 12	572,387	779,308	789,406
July 5	447,396	588,159	553,910
Cumulative total 31 weeks	21,505,048	23,725,022	21,740,583

NYC Strike Threat Averted

A threatened strike against the New York Central at and east of Buffalo, N.Y., by members of four operating brotherhoods had apparently been averted as this issue of *Railway Age* went to press.

The strike threat, according to L. W. Horning, NYC vice-president, personnel and public relations, involved "a loose packet of extra pay claims, grievances and demands which were dealt with two years ago by an emergency board." Unions involved were the Order of Railway Conductors and the Brotherhoods of Railroad Trainmen, Locomotive Engineers, and Locomotive Firemen & Enginemen.

If the strike should take place, B. of

L. F. & E. spokesmen have asserted that it would also halt all New York, New Haven & Hartford passenger trains operating into and out of Grand Central Terminal in New York, even though neither the New Haven nor its employees are involved in the dispute. The stopping of New Haven trains would result from the fact that they use NYC tracks for the 12 miles between Grand Central and Woodlawn. New Haven trains operating into Pennsylvania Station over Hell Gate bridge presumably would not be affected.

Ogden Gateway Argument Set for October 15-16

The Interstate Commerce Commission has set October 15-16 as dates for re-argument in the Ogden Gateway case. As noted in *Railway Age* of August 4, page 96, the commission set the case for re-argument to permit two new commissioners to participate in the proceeding. The "gateway" case, docketed as No. 30297, involves a complaint by the Denver & Rio Grande Western, asking the I.C.C. to require the Union Pacific to participate in joint through rates via the Ogden, Utah, gateway.

I.C.C. Postpones Order On Rates in Montana

The Interstate Commerce Commission has postponed indefinitely the effective date of its order requiring railroads in Montana to bring intrastate rates up to the interstate level. The order was scheduled to become effective August 1.

The Montana Board of Railroad Commissioners is contesting the order, and on July 24 the U. S. District Court for Montana issued an interlocutory injunction, the effect of which is to restrain the commission's order until the court can hear and decide the case.

Intrastate rates in Montana were the subject of an I.C.C. investigation docketed as No. 30674. The commission found that failure of the state commission to authorize increases resulted in discrimination against interstate commerce; and when the state commission still did not approve the higher rates, the I.C.C. ordered the railroads to make the increases on five days' notice. (*Railway Age*, March 10, page 96).

AFTER AN EXTENDED ABSENCE, the Santa Fe's large illuminated signboard has made its return to Chicago's Outer Drive skyline. The original sign was destroyed several years ago when fire gutted a building beneath it. Inspecting the new sign here with officers of the signboard firm are A. A. Dailey, general advertising manager (second from left), and F. A. Tipple, assistant general advertising manager (center), of the Sante Fe.

Management Firm Begins Investigation of I.C.C.

The Wolf Management Engineering Company of Chicago has started work on its "investigation and study of the organization and operations of the Interstate Commerce Commission." The firm, recently retained by the Senate Interstate Committee, is conducting this study of the I.C.C. to determine "what changes should be made in order to promote maximum efficiency."

The investigation was authorized by Senate Resolution 332, passed by the Senate just prior to adjournment. (*Railway Age*, July 7, page 13). The resolution provided $50,000 for the study, which is under the general supervision of the Senate Interstate Committee.

Representatives of the Wolf company met with members of the commission, and the latter agreed to cooperate fully with the investigation. Deadline for the company's final report to the senate committee is December 26, and the committee is required to submit its report to the Senate by January 31, 1953.

I.C.C. Bureau Reports On Passes Issued in 1951

During 1951, Class I railroads issued 5,198,184 passes, including 2,397,301 term passes and 2,800,883 trip passes. The pullman Company issued 252,323, of which 24,385 were term and 227,938 trip.

This was shown in a statement (No. 5224) issued by the Interstate Commerce Commission. The statement was prepared by the commission's Bureau of Transport Economics and Statistics

(*Continued on page* 58)

ST. LOUIS TRUCK STRIKE ENDS; L.C.L. MOVES AGAIN

Local trucking operations in the St. Louis metropolitan area began slowly to return to normal early this week as operators began working off the backlog of freight accumulated during the more than month-long tie-up.

L.c.l. services, normally handled between roads and from freight houses to industry by the Ben Gutman Truck Service, Inc., were almost entirely halted except where emergency trap car service could be operated. (*Railway Age*, August 4, page 13.)

The dispute was settled by granting a 30-cent hourly wage and a reduction of the work week from 48 to 40 hours. The A. F. of L. Teamsters and Chauffeurs Union, which called the strike, had tied up over-the-road trucking through the St. Louis area as well as local rail and truck transfer and P. U. and D. services.

OVERSEAS

British Railways Test Three-Car Diesel Train

A new British-built diesel train, designed to achieve economies on branch lines and some main lines, has begun experimental service out of London, as part of the British Railways study of the possibility of using lightweight units for passenger traffic.

The train is similar to a bus in many ways. The driver sits at the front in full view of the passengers, operating only the main power and brake controls. The mass produced power unit is the same as those used in the latest London suburban buses. It gives a maximum speed of 48 m.p.h., and a cruising speed of 45.

The three-car train has two motor cars and an engineless trailer between, with a total capacity of 129 passengers and an unladen weight of nearly 40 tons. It can be driven from either end, and in slack periods the trailer can be omitted, thus reducing weight. Maintenance costs are said to be low; fuel consumption is reportedly 5½ miles per gallon.

Progress Reported on European Car Pool

Six European railway administrations —Belgium, Italy, Luxemburg, the Netherlands, the Saar, and Switzerland —are reported to have agreed in principle to joining a European freight car pool.

Their agreement is said to be an outgrowth of a report by the Subcommittee on Rail Transport of the Inland Transport Committee of the United Nations

Economic Commission for Europe, to the effect that the existing French-German car pool "has yielded satisfactory results." That pool presently comprises 50,000 French cars and 50,000 German cars, marked "EUROP," and used without discrimination by either country (*Railway Age*, June 18, 1951, page 65).

The subcommittee expressed the hope that such a pool "may be extended to as many railway systems as possible." Potential savings were estimated at $50 million in capital investment and $5 million in annual charges for each one per cent reduction in the total number of European freight cars brought about as a result of pooling arrangements.

SUPPLY TRADE

Harry R. Hill, who has been head of the education section for the locomotive and car equipment department of the General Electric Company in Erie, Pa., has been appointed to a similar position wth **International General Electric.** In his new assignment, he will be responsibles for aiding foreign customers in obtaining efficient operation, inspection and maintenance on their transportation equipment.

Robert J. Wylie has joined the sales staff of the **Buckeye Steel Castings Company.** Mr. Wylie has been in the railway supply business in St. Paul, Minn., for many years.

The **Quaker Rubber Corporation,** division of **H. K. Porter Company,** has established a new stock carrying branch warehouse and sales office at 2360 N. W. Quimby street, Portland 10, Ore., to serve the Pacific Northwest.

J. H. Dunlevy, who has been appointed district manager of the Los Angeles office of the Garlock Packing Company to succeed Clarence W. Harmon, who has retired because of ill health. Mr. Dunlevy has been with Garlock Packing since 1919.

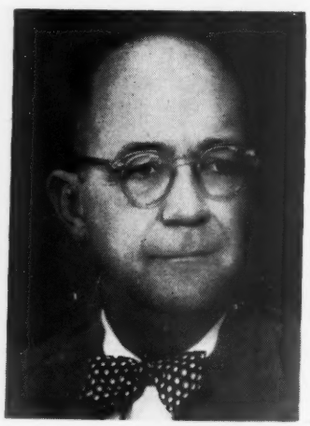
The new branch is under supervision of **Milton M. Clark,** district manager. **R. R. McCracken** and **J. G. Young** have been appointed sales representatives in that area.

George Y. Taylor has been appointed director of personnel for the diesel locomotive and ordnance divisions of the **American Locomotive Company** at Schenectady and Auburn, N. Y. Mr. Taylor joined the company as director of education in September 1946. The Alco-GE diesel-electric locomotive school was organized under his direction.

Thomas J. Wood has been appointed operating assistant to the president of the Brake Shoe & Castings division of the **American Brake Shoe Company,** and **Raymond A. Frick,** has been named general works manager of the division. The company also has appointed **Thomas W. Russell, Jr.,** as general purchasing agent.

The **Wix Accessories Corporation,** Gastonia, N. C., has acquired new plant facilities adjacent to its main plant, including a modern brick building containing over 70,000 sq. ft. of additional manufacturing and warehousing floor space for immediate use.

F. H. Ebbert has been appointed vice-president and general sales manager of the **Gustin-Bacon Manufacturing Company,** Kansas City, Mo. In his new capacity, Mr. Ebbert will



F. H. Ebbert

have charge of the company's four sales divisions—glass fiber insulation products; industrial; railroad; and automotive. He has been vice-president and sales manager of the automotive division since 1946.

John R. Gilmartin has been appointed general sales manager of the Hyatt Bearings division of the **General Motors Corporation,** at Harrison, N. J., to succeed **Howard K. Porter,** who has been appointed assistant to general manager on special assignments. Mr. Gilmartin joined the division in Detroit in 1929, working first in the engineering department and later as a sales engineer. In 1941, he was transferred to Harrison where he assumed charge of all government contracts and priorities. He later was appointed assistant production manager. In 1947 he was appointed assistant to the general sales manager, the position he held until his recent appointment.

John R. Gilmartin

EQUIPMENT AND SUPPLIES

FREIGHT CARS

5,402 Freight Cars Delivered in July

July deliveries of new freight cars for domestic use included 5,402 units, compared with 6,411 in June and 5,290 in July 1951, the American Railway Car Institute and the Association of American Railroads have announced jointly. Orders for new cars in July totaled 1,536 and the backlog of cars on order on August 1 was 95,265. A breakdown by types of cars ordered and delivered in July, and of cars on order on August 1, appears in the accompanying table.

Type	Ordered July '52	Delivered July '52	On Order & Undelivered Aug. 1, '52
Box—Plain	8	2,042	28,158
Box—Auto	..	..	750
Flat	2	138	3,079
Gondola	804	899	21,605
Hopper	200	1,397	26,504
Covered Hopper	100	17	5,136
Refrigerator	207	459	4,041
Stock	..	..	500
Tank	203	387	4,785
Caboose	12	63	268
Other	..	..	439
TOTAL	1,536	5,402	95,265
Carbuilders	1,224	3,860	58,705
Railroad Shops	312	1,542	36,560

The **Detroit, Toledo & Ironton** has ordered 300 50-ton 50½-ft. automobile box cars from the Pullman-Standard Car Manufacturing Company. Delivery of the cars, which will have nailable steel flooring, is scheduled for December 1952 and January 1953.

PASSENGER CARS

The **Canadian National** has ordered from the Canadian Car & Foundry Co. at a cost of $3,300,000, six new multiple-unit coaches and 12 trailer cars specially designed for commuter traffic over electrified lines through Mount Royal tunnel, in Montreal. The 18 new cars will be in operation before the end of the year. Of lightweight steel and aluminum construction, they will have a total seating capacity of 1,536. Each motor coach will seat 88 passengers, each trailer 84. Seats, each with its own reading light, will be reversible, with foam-rubber cushioning. Car interiors will be finished in pastel shades with soft-glow materials covering the lower portions of the walls.

Multiples of three units—a self-propelled motor coach and two trailer cars —may be used to make up trains of six, nine, 12, 15, or 18 cars. A train of three cars may be controlled from either the motor coach or the last trailer.

SIGNALING

The **Chicago, Burlington & Quincy** has ordered equipment from the General Railway Signal Company for installation of a remote control interlocking at Trevino, Wis.

The **Chicago, Indianapolis & Louisville** has ordered from the General Railway Signal Company equipment for installation of a relay interlocking at Dyer, Ind.

CONSTRUCTION

Atchison, Topeka & Santa Fe.—Necessary grading and incidental work in connection with a change of line in the second district of the Eastern division near Malvern, Kan., will be handled by C. E. Clark of Kansas City, Mo., under a contract recently awarded.

Central of New Jersey.—Contracts have been awarded, at the indicated estimated costs, to: George W. Rogers Construction Corporation for rebuilding passenger ferry fender racks at Jersey City terminal ($55,750); to the Wagner Construction Company for Bridge 0/07, Solomons Creek, Buttonwood, Pa. ($53,200); and to the Caruso Construction Company for a new station at Atlantic Highlands, N. J. ($35,000). A project for grade crossing elimination at Dunellen, N. J., at an estimated cost of $6,500,000, also has been authorized.

Northern Pacific.—A contract for construction of a new $32,500 yard office building in Missoula, Mont., has been awarded to the Lowe Construction Company of Billings, Mont. The building, measuring 24 feet by 76 feet, will be of precast concrete block, on a concrete foundation and floor. Work is scheduled to start at once and be completed by December 31.

Raleigh-Rolesville.—Division 4 of the I.C.C. has denied this road's application for authority to construct and operate a 15.5-mile rail line between Lassiter, N. C., and a point near Raleigh. The road denied contentions that its proposed line would merely provide the Atlantic Coast Line with a more direct route into Raleigh. The Southern, the Seaboard Air Line and the Norfolk Southern opposed the application. Division 4 concluded that there is no "strong and urgent need" for the new line at this time, and that its construction would constitute "unnecessary duplication" of railroad facilities (*Railway Age*, April 9, 1951, page 74).

Richmond, Fredericksburg & Potomac. — A contract has been awarded to Jas. Fox & Son for an extension and addition to the existing freight warehouse at Richmond, Va., at an estimated cost of $90,000.

FINANCIAL

Chicago, West Pullman & Southern. — *Lease of Locomotives.* — The I.C.C. has dismissed without prejudice this road's application for authority to lease six diesel-electric locomotives from the International Harvester Company (*Railway Age*, July 14, page 87). The road advised the commission it wished to withdraw the application.

Condon, Kinzua & Southern.—*Interest on Note.*—Division 4 of the I.C.C. has authorized a reduction, from 6 per cent to 2 per cent, in the interest rate on this road's promissory note of $125,000. The Kinzua Pine Mills Company will take over the note from the present holder, Kinzua Lumber Company. The note, dated May 21, 1928, has accrued interest of $103,972.

Erie.—*Acquisition.*—This road has applied to the I.C.C. for authority to acquire all properties of two subsidiary roads, the Paterson & Hudson River and the Sharon. The latter two roads are operated under lease, and almost all their stock is owned by the Erie. These separate companies would be dissolved. The P&HR has 13 miles of main line between Marion Junction, N. J., and Paterson. The Sharon has 7.9 miles of main line between Sharon, Pa., and Pymatuning, plus an additional 24.8 miles of branch line.

Long Island. — *Reorganization.* — Division 4 of the I.C.C. has approved payment of $21,000 a year to Henry I. Stimson as counsel for the trustee of this road. Mr. Stimson was appointed counsel in December 1951.

MEMORIALIZING the 1,307 Pennsylvania employees who laid down their lives in World War II, this heroic sized bronze statue was unveiled in the railroad's 30th Street Station in Philadelphia on August 10. General of the Army Omar N. Bradley, chairman of the Joint Chiefs of Staff, was the dedication speaker, at exercises presided over by Walter S. Franklin, PRR president. The formal unveiling was by Sgt. Robert E. Laws, an employee of the railroad's Altoona car shops, one of the 54,035 PRR men and women who served in the armed forces during the war, and a holder of the Medal of Honor. Designed by Walter Hancock, sculptor, the 36-ft. 6-in. memorial is said to be one of the largest cast bronze statues ever made.

Louisiana Midland. — *Lease and Trackage Rights.* — Renewal of this road's lease and trackage rights agreement with the Missouri Pacific has been approved by Division 4 of the I.C.C. The LM leases approximately 14.7 miles of MP trackage between Wildsville, La., and Concordia Junction. In addition, it operates under trackage rights over approximately 7.3 miles between Concordia Junction and Vidalia, and uses track and station facilities at Vidalia. The new agreement, not substantially different from the previous one, will run 10 years from January 1, 1952.

Missouri-Kansas-Texas of Texas. —*Trackage Rights.*—Renewal of the agreement under which this road uses the Texas & New Orleans passenger station at Austin, Tex., has been approved by the I.C.C. The T&NO trackage includes approximately 2 miles of main line and 3.3 miles of yard and roundhouse tracks. The M-K-T of Texas has used this T&NO trackage and the passenger station since 1904. The new agreement runs 10 years from November 1, 1949 (*Railway Age*, June 9, page 72).

Olin Industries.—*Railroad Subsidiaries.*—Division 4 of the I.C.C. has

Table of Selected Income and Balance-Sheet Items of Class I Steam Railways for April and four months of 1952 appears on page 62.

authorized this industrial firm to acquire direct control of two railroad subsidiaries. The Louisiana & Pine Bluff and the Nacogdoches & Southeastern, each approximately two miles long, have been owned by two Olin-controlled firms. The latter will be dissolved and control of the rail lines will pass directly to the parent company.

Railway Express Agency. — *New Director.*—P. M. Shoemaker, president of the Delaware, Lackawanna & Western, has been elected a director, to succeed William White, former president of the DL&W, who has recently become president of the New York Central.

New Securities

Application has been filed with the I.C.C. by:

ATLANTIC COAST LINE.—To nominally issue $13,817,000 of general mortgage, series X bonds. A portion of these bonds ($4,954,000) would be so-called "free" bonds authorized by the Coast Line's general mortgage. The remainder, $8,863,000, would reflect net capital expenditures made between January 1950 and March 31, 1952, for improvements, construction, completion or acquisition of railroad road property. The new series X bonds would be held in the company treasury until such time as actual sale is authorized by corporate action and by the I.C.C.

BANGOR & AROOSTOOK.—To assume liability for $4,000,000 of equipment trust certificates, to finance in part 500 new freight cars costing an estimated $4,487,500

	Description and Builder	Estimated Unit Cost
150	box cars (Pacific Car & Foundry Co.)	$8,030
350	refrigerator cars (Pacific Car & Foundry Co.)	9,380

The certificates, to be dated October 1, would mature in semiannual payments of $220,000 each, between April 1, 1953, and October 1 1957; and payments of $90,000 each, from April 1, 1958, until October 1, 1967. The certificates would be sold by competitive bids, with the interest rate to be set by such bids.

SEABOARD AIR LINE.—To issue and sell, at competitive bidding, $25,000,000 of sinking fund debentures. Proceeds from sale of these debentures would replace funds used to redeem general mortgage 4½ per cent income bonds, series A. Some of these bonds already have been purchased or redeemed, but there were $26,931,800 still outstanding on July 29. These would be called August 29. The general mortgage bonds are convertible into common stock, and if conversion runs high the SAL would place in its general funds any unused proceeds from sale of the debentures. The debentures, to be dated September 1, 1952, would mature September 1, 1977.

Security Price Averages

	Aug. 12	Prev. Week	Last Year
Average price of 20 representative railway stocks	64.03	64.20	53.16
Average price of 20 representative railway bonds	93.09	92.93	92.15

Dividends Declared

MAINE CENTRAL.—6% prior preferred, $1.50, quarterly, payable October 1.

NORTH PENNSYLVANIA.—$1, quarterly, payable August 25 to holders of record August 18.

PITTSBURGH & WEST VIRGINIA.—50¢, payable September 15 to holders of record August 20.

PITTSBURGH, YOUNGSTOWN & ASHTABULA.—7% preferred, $1.75, payable September 2 to holders of record August 20.

SOUTHERN PACIFIC.—(stock dividend), 100 per cent, payable August 27 to holders of record August 7.

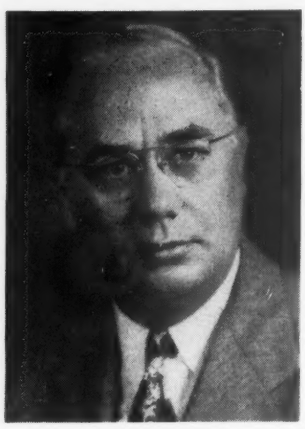
RAILWAY OFFICERS

EXECUTIVE

Edgar V. Hill has been appointed vice-chairman of the TRAFFIC EXECUTIVE ASSOCIATION—EASTERN RAILROADS, and chairman of the General Freight Traffic Committee—Eastern Railroads, at New York, succeeding **Nathan W. Hawkes**, who has retired under the association's pension regulations after more than 51 years of service in behalf of Eastern and Canadian roads. Mr. Hawkes has held the position of vice-chairman since May 1, 1942.

FINANCIAL, LEGAL & ACCOUNTING

W. N. Norris, assistant comptroller for the GREAT NORTHERN, has been appointed general auditor, succeeding the late **V. N. Wahlberg.** Mr. Norris is succeeded by **H. J. Knaff,** assistant general auditor. **A. A. Ledegar,** special accountant, **V. C Peterson,** tax accountant, and **H. C. Healey,** accountant for miscellaneous companies, have been appointed assistants to comptroller. **James C. Kenady** has been named acting right of way, land and tax commissioner, during the illness of **John Garing.**



Walter N. Norris

After joining the GN as clerk in 1920, Mr. Norris became assistant special accountant in 1927, assistant statistician in 1929, special accountant in 1936, tax accountant in 1940, and assistant comptroller in 1946.

Mr. Knaff has been with the railway since 1907. He was appointed assistant special accountant in 1926, assistant general bookkeeper in 1927, general bookkeeper in 1929, general accountant in 1938, and assistant general auditor in 1946.

OPERATING

As *Railway Age* reported on July 14, page 88, **P. J. King** has been appointed general superintendent of transportation of the RAILWAY EXPRESS AGENCY at Chicago. Mr. King joined the REA in 1918 as a clerk in the transportation department and

P. J. King

worked his way up through a number of positions in that department to become superintendent transportation, and, ultimately, general superintendent of transportation.

TRAFFIC

Robert S. Johnson has been appointed general agent of the MINNEAPOLIS, NORTHFIELD & SOUTHERN at Pittsburgh, Pa.

Alfred J. Ball, foreign freight traffic manager of the PENNSYLVANIA at Philadelphia, has retired after almost 52 years of service with that road.

Wilfred P. Van Iderstine, assistant general freight agent of the ERIE at New York, has retired because of illness, after more than 39 years of service.

As *Railway Age* reported on July 14, **George H. Rehm** has been appointed freight traffic manager, rates and divisions, for the CHICAGO, BURLINGTON & QUINCY, and is succeeded by **Robert E. Barr,** as assistant freight traffic manager. **Clarence E. Larsen** has been named general freight agent.

Mr. Rehm started his rail career with the Colorado & Southern, a Burlington subsidiary, in 1922, as a stenographer. He held several positions with the C&S until 1935, when he was appointed assistant general freight agent. He was promoted to freight traffic manager of the C&S in 1941, and came to Chicago as assistant freight traffic manager for the Burlington in 1950.

Mr. Barr has been general freight agent for the Burlington at Chicago since 1946. He started as a clerk in the road's Omaha office in 1925 and held positions at various locations before becoming general agent at Minneapolis in 1945.

Mr. Larsen started working for the Burlington in 1937 at Omaha as a

(*Continued on page* 58)

REVENUES AND EXPENSES OF RAILWAYS

(Dollar figures are stated in thousands; i.e., with last three digits omitted)

MONTH OF JUNE AND SIX MONTHS OF CALENDAR YEAR 1952

Name of Road		Average mileage operated during period	Operating Revenues: Freight	Pass.	Total 1952	Total (inc. misc.) 1951	Operating Expenses: Maint. Way and Structures: Total 1952	Total 1951	Deprec. and Retirements	Maint. Equipment: Total 1952	Total 1951	Deprec. and Retirements	Traffic	Transportation	Total 1952	Total 1951	Operating ratio 1952	Operating ratio 1951	Net from railway operation	Railway tax accruals	Net railway operating income 1952	Net railway operating income 1951
Akron, Canton & Youngstown	June	171	392	....	405	468	78	74	6	54	53	16	40	129	332	331	82.0	70.7	73	29	28	48
	6 mos.	171	2,692	....	2,759	2,781	435	408	38	327	273	94	222	821	1,993	1,887	72.3	67.9	765	328	332	322
Atchison, Topeka & Santa Fe	June	13,072	41,569	5,691	51,644	46,462	7,410	8,102	824	9,139	7,999	1,673	1,213	15,849	35,729	35,031	69.2	75.4	15,915	8,459	6,454	4,282
	6 mos.	13,073	234,112	29,308	290,225	277,348	40,975	42,385	4,165	54,960	53,320	9,991	6,982	92,714	208,105	205,633	71.7	74.1	82,120	47,267	33,100	29,091
Atlanta & St. Andrews Bay	June	82	282	2	292	300	27	32	2	31	25	4	10	63	149	143	50.9	47.8	144	73	43	45
	6 mos.	82	1,752	10	1,809	1,795	208	212	17	146	123	24	54	380	880	830	48.6	46.2	929	485	288	282
Atlanta & West Point	June	268	258	54	361	369	46	49	5	58	60	11	15	166	307	311	85.2	84.2	53	31	7	7
	6 mos.	93	1,714	291	2,307	2,276	287	306	32	355	336	68	91	949	1,829	1,883	79.3	82.8	477	257	133	68
Western of Alabama	June	133	299	51	393	370	50	46	8	66	64	15	16	149	303	287	77.2	77.6	90	45	47	27
	6 mos.	133	1,805	281	2,335	2,353	297	343	42	413	369	81	94	854	1,795	1,809	76.9	76.9	540	301	228	198
Atlantic & Danville	June	205	137	....	138	126	22	28	2	17	8	5	11	51	113	103	81.6	81.7	26	10	—3	—1
	6 mos.	205	965	....	980	891	217	168	11	72	56	29	68	311	738	666	75.4	74.8	241	59	66	72
Atlantic Coast Line	June	5,472	11,234	1,635	13,722	12,891	2,816	2,410	119	3,012	2,516	541	361	4,749	11,534	10,719	84.1	83.1	2,188	1,075	758	637
	6 mos.	5,472	73,022	12,581	92,242	82,217	14,272	17,435	776	16,498	15,084	3,157	2,179	30,276	67,061	68,755	72.7	83.6	25,181	15,325	7,602	3,614
Charleston & Western Carolina	June	343	508	2	525	547	135	158	4	128	74	41	18	177	471	441	89.6	80.7	55	20	22	39
	6 mos.	343	3,330	21	3,449	3,270	814	841	24	660	479	233	105	1,051	2,708	2,499	78.5	76.4	741	325	364	344
Baltimore & Ohio	June	6,187	26,887	2,280	31,514	38,388	4,613	5,651	439	6,768	8,463	972	882	13,163	26,978	31,511	85.6	82.1	4,536	894	2,567	3,064
	6 mos.	6,187	189,686	12,630	216,919	219,506	28,524	28,851	2,478	45,964	49,387	5,828	5,251	86,381	175,260	181,211	80.8	82.6	41,659	15,204	21,115	17,740
Staten Island Rapid Transit	June	29	262	52	317	275	61	51	10	29	39	2	1	152	275	266	86.8	96.9	42	36	—20	—43
	6 mos.	29	1,523	307	1,850	1,715	325	315	69	202	226	11	9	879	1,596	1,588	86.3	92.6	254	217	—110	—173
Bangor & Aroostook	June	602	581	32	650	768	250	186	16	218	180	73	26	222	772	679	118.8	88.4	—122	Cr. 33	—4	65
	6 mos.	602	7,147	210	7,628	6,121	1,470	1,084	97	1,424	1,064	416	124	2,049	5,426	4,166	71.1	68.1	2,202	1,107	1,095	869
Bessemer & Lake Erie	June	212	1,059	....	1,076	3,173	146	227	19	540	847	107	18	387	1,192	1,781	110.8	56.1	—116	Cr. 62	222	536
	6 mos.	212	10,669	4	10,795	13,194	1,242	1,105	119	3,749	3,697	597	107	2,724	8,398	8,424	77.8	63.8	2,397	2,023	1,565	2,629
Boston & Maine	June	1,701	5,092	1,098	7,186	7,342	1,383	1,447	189	1,157	1,150	181	112	2,908	5,864	6,105	81.6	83.1	1,322	617	413	368
	6 mos.	1,701	33,065	5,785	43,915	43,921	8,071	7,657	1,093	6,836	7,122	1,027	693	18,884	36,415	36,262	82.9	82.6	7,500	3,556	1,994	1,851
Cambria & Indiana	June	35	75	....	75	135	18	3	5	72	81	27	....	15	110	107	147.2	79.4	—35	48	43	67
	6 mos.	35	835	....	835	822	99	68	9	505	490	112	1	138	788	759	94.4	92.4	47	419	329	362
Canadian Pacific Lines in Maine	June	234	283	41	354	374	137	126	5	74	68	8	8	232	463	370	130.6	98.8	—108	28	—180	—57
	6 mos.	234	3,574	305	4,055	3,788	734	607	30	623	525	50	46	1,535	3,020	2,571	74.5	67.9	1,035	175	384	678
Canadian Pacific Lines in Vermont	June	90	185	11	214	231	70	354	4	29	30	....	7	134	247	222	115.6	96.2	—33	13	—104	—57
	6 mso.	90	1,153	82	1,346	1,352	398	312	23	194	196	1	38	722	1,400	1,292	104.0	95.5	—54	77	—458	—346
Central of Georgia	June	1,786	2,825	212	3,338	3,401	572	627	33	621	564	101	131	1,488	3,006	3,054	90.0	89.8	333	216	113	90
	6 mos.	1,786	18,590	1,372	22,082	22,201	3,575	4,089	247	3,657	3,735	610	788	9,233	18,453	19,373	83.6	87.3	3,629	1,809	1,422	732
Central of New Jersey	June	411	2,723	506	3,505	3,647	515	484	71	563	633	75	59	1,714	3,030	3,210	86.4	88.0	475	392	—326	—317
	6 mos.	411	16,665	2,805	21,271	21,272	2,913	2,836	435	3,813	3,706	484	352	10,837	18,927	19,066	89.0	89.6	2,344	2,454	—2,352	—2,322
Central of Pennsylvania	June	207	1,506	8	1,567	1,721	171	191	18	305	338	75	27	458	1,001	1,146	63.9	66.6	566	116	735	793
	6 mos.	207	9,723	33	10,077	9,443	1,063	1,009	89	2,203	2,278	441	155	2,835	6,504	6,706	64.5	71.0	3,572	718	4,447	4,050
Central Vermont	June	422	810	57	937	1,061	215	207	16	155	153	12	16	386	812	813	86.7	76.6	125	46	6	129
	6 mos.	422	4,819	361	5,577	5,671	1,089	998	100	1,009	960	75	96	2,509	4,960	4,637	88.9	81.8	617	266	—21	421
Chesapeake & Ohio	June	5,116	26,721	823	29,104	31,093	4,421	4,083	364	6,046	6,055	1,522	627	8,945	21,390	21,998	73.5	70.7	7,714	3,910	4,214	4,021
	6 mos.	5,116	168,584	4,379	181,536	175,488	25,245	23,314	2,074	37,020	33,598	8,494	3,701	57,914	131,389	126,428	72.4	72.0	50,146	25,934	26,661	22,631
Chicago & Eastern Illinois	June	868	2,107	302	2,703	2,655	387	436	33	461	396	123	121	1,010	2,153	2,119	79.6	79.8	550	138	275	270
	6 mos.	868	13,437	1,545	16,887	16,358	2,137	2,229	178	2,647	2,356	685	693	6,256	12,784	12,378	75.7	75.7	4,104	1,475	1,975	1,775
Chicago & Illinois Midland	June	130	415	....	430	786	54	124	8	136	163	21	27	190	449	567	104.4	72.2	—19	Cr. 12	—40	108
	6 mos.	130	3,361	1	3,451	4,765	420	621	46	939	979	125	173	1,185	2,970	3,291	86.0	69.1	482	264	57	686
Chicago & North Western	June	7,897	11,648	2,194	15,679	17,054	2,984	2,985	358	3,068	3,314	738	381	7,190	14,456	15,272	92.2	89.6	1,223	1,061	—278	483
	6 mos.	7,912	73,088	10,861	95,499	96,995	15,973	15,369	2,027	19,285	19,001	4,453	2,106	46,257	88,666	87,811	92.8	90.5	6,832	6,349	—1,794	608
Chicago, Burlington & Quincy	June	8,808	15,652	1,870	19,726	19,851	4,272	4,078	408	3,496	3,459	699	470	7,342	16,401	16,368	83.1	82.5	3,325	2,014	1,052	263
	6 mos.	8,811	99,232	9,401	121,446	127,122	18,966	18,081	2,802	20,657	19,282	4,164	2,850	44,681	92,041	90,707	75.8	71.4	29,406	16,744	10,756	13,700
Chicago Great Western	June	1,474	2,453	13	2,660	2,700	501	421	39	352	403	119	101	845	1,944	1,919	73.1	71.1	716	209	278	278
	6 mos.	1,474	15,899	79	17,066	17,051	2,854	2,703	262	2,324	2,457	711	608	5,612	11,931	11,960	69.9	70.1	5,136	1,763	1,810	1,645
Chicago, Indianapolis & Louisville	June	541	1,502	75	1,701	1,659	331	312	18	298	290	64	89	623	1,445	1,398	85.0	84.2	256	80	63	88
	6 mos.	541	9,660	417	10,772	10,472	1,921	1,825	116	1,634	1,698	380	532	3,732	8,405	8,376	78.0	80.0	2,367	930	827	709
Chicago, Milw., St. Paul & Pacific	June	10,671	17,570	1,826	21,580	21,393	3,965	3,989	402	4,443	4,517	846	526	8,762	18,715	19,159	86.7	89.6	2,865	1,467	727	511
	6 mos.	10,671	104,658	9,328	127,474	126,359	20,027	17,737	2,305	27,855	26,438	5,394	2,877	54,281	111,300	109,024	87.3	86.3	16,173	9,080	4,393	4,423
Chicago, Rock Island & Pacific	June	7,916	15,973	1,798	19,274	16,286	2,651	2,667	244	2,769	2,452	510	489	6,459	13,189	12,698	68.4	78.0	6,085	2,884	2,699	1,299
	6 mos.	7,916	84,816	10,114	104,251	99,916	13,094	12,536	1,452	17,172	15,699	2,956	2,934	38,464	76,547	75,085	73.4	75.1	27,704	12,421	11,479	8,585
Chicago, St. Paul, Minn. & Omaha	June	1,617	2,185	204	2,635	2,738	482	491	48	421	431	87	71	1,287	2,383	2,585	90.4	94.4	252	172	—78	—141
	6 mos.	1,617	13,224	1,063	15,818	15,701	2,579	2,600	274	2,597	2,672	529	397	8,383	14,724	15,307	93.1	97.5	1,094	1,085	—1,228	—1,721
Clinchfield	June	317	1,937	5	1,953	1,859	278	210	18	322	305	80	44	394	1,077	996	55.1	53.6	876	215	771	825
	6 mos.	317	12,001	10	12,074	12,042	1,708	1,623	105	1,964	1,930	487	249	2,682	6,818	6,643	56.5	55.2	5,256	1,283	4,714	5,090

(Table continued on second left-hand page)

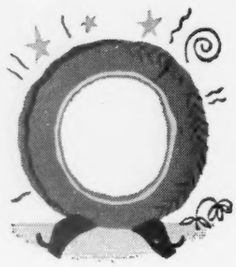
How to make packings last longer

Tips by Johns-Manville Engineers to help you keep production rolling

The old packing gives the clue to most packing failures...

I was ruined by shaft misalignment. When old packing shows excessive reduction in cross-section directly beneath rod, shaft or plunger, bad alignment is indicated. Leakage usually occurs around top of shaft or rod. Cause may be worn bearings which permit shaft to whip.

Too much gland pressure did me in. Badly deformed rings next to the gland follower, with bottom rings in fair condition, suggest excessive gland pressure or improper installation. Excessive gland pressure sometimes causes packing to extrude between follower and rod or shaft.



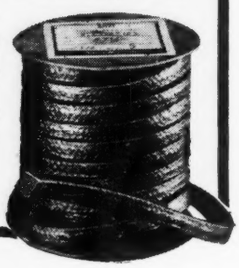
Lack of lubrication made things too hot for me. If the wearing faces of the rings are dried out or charred, with the rest of the packing in usable condition, the trouble probably is lack of lubrication. Excessively high operating temperatures and wrong type of packing can cause similar symptoms.

I'm worn out because I turned with the shaft. Unusual wear on the outside circumference of the packing almost always indicates one of two conditions. The rings may be binding on the shaft and rotating with it, or the packing is too loose in the stuffing box and moving with the rod.

Why you can count on Johns-Manville

INTERLOCKED ROD PACKING

Because it's braided square, not braided round and pressed square, J-M Interlocked Packing lasts longer . . . has a better contact area . . . makes a tight seal with medium gland pressure. J-M Interlocked is recommended for both reciprocating and rotating service, for use against steam up to 500°F; hot and cold fresh and salt water; oils; weak acids and caustics.



Your Johns-Manville Representative will help, too! He will be glad to talk over your packing problems with you to help you get the most out of your packings . . . or to help you select the most efficient and long wearing packing for your job. Johns-Manville, Box 60, New York 16, N. Y.

JOHNS-MANVILLE JM PRODUCTS

Johns-Manville PACKINGS & GASKETS

. . . dozens of man-hours— by a few minutes of Radiography

THERE'S a lot of skilled machinist time invested between a cast bronze blank and a finished precision gear. And it's time all lost when you wait until the cutting tool exposes a gas hole or other irregularity in the casting causing rejection.

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EASTMAN KODAK COMPANY
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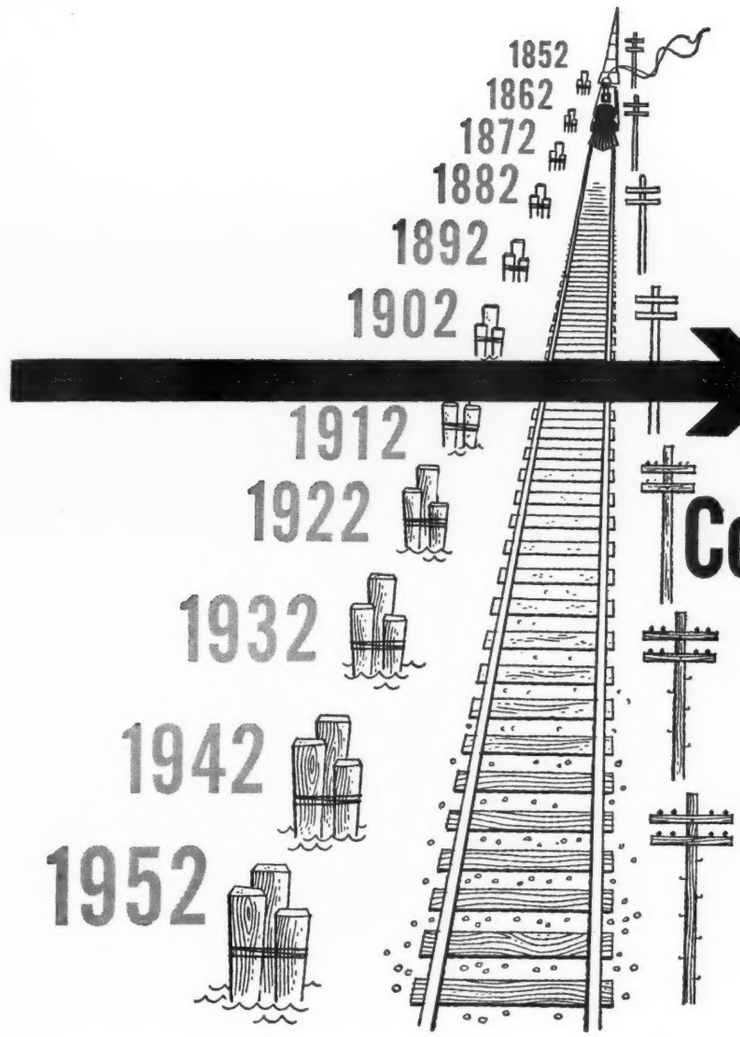
REVENUES AND EXPENSES OF RAILWAYS

(Dollar figures are stated in thousands; i.e., with last three digits omitted)

MONTH OF JUNE AND SIX MONTHS OF CALENDAR YEAR 1952

Name of road		Average mileage operated during period	Operating Revenues: Freight	Pass.	Total (inc. misc.) 1952	Total (inc. misc.) 1951	Operating Expenses: Maint. Way and Structures: Total 1952	Total 1951	Deprec. and Retirements	Maint. Equipment: Total 1952	Total 1951	Deprec. and Retirements	Traffic	Transportation	Total 1952	Total 1951	Operating ratio 1952	Operating ratio 1951	Net from railway operation	Railway tax accruals	Net railway operating income 1952	Net railway operating income 1951
Colorado & Southern	June	736	843	77	1,048	1,290	173	194	14	203	259	39	27	390	844	1,014	80.5	78.6	204	156	48	56
	6 mos.	736	6,278	469	7,513	7,452	886	887	107	1,241	1,226	211	171	2,731	5,371	5,482	71.5	73.6	2,142	1,297	764	577
Ft. Worth & Denver	June	1,038	1,496	180	1,834	1,552	378	210	31	237	277	28	52	654	1,420	1,288	77.4	83.0	414	134	195	67
	6 mos.	1,038	9,886	936	11,812	10,570	1,830	1,631	190	1,468	1,493	185	333	4,295	8,510	8,065	72.0	76.3	3,303	1,167	1,483	928
Colorado & Wyoming	June	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
	6 mos.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Columbus & Greenville	June	168	114	....	119	141	29	45	4	23	31	5	5	44	118	152	98.9	107.8	1	15	1	—16
	6 mos.	168	898	....	935	1,055	204	256	22	175	180	35	25	289	804	883	85.9	83.7	132	132	44	70
Delaware & Hudson	June	793	4,046	156	4,360	4,675	751	733	59	912	979	142	87	1,692	3,639	3,800	83.5	81.3	721	327	436	446
	6 mos.	793	26,791	962	28,729	29,098	3,960	3,751	401	5,878	5,890	857	497	10,899	22,460	22,379	78.2	76.9	6,268	3,237	3,329	3,202
Delaware, Lackawanna & Western	June	962	5,659	875	7,262	7,604	919	946	135	1,475	1,412	300	165	3,051	5,903	6,158	81.3	81.0	1,359	730	654	666
	6 mos.	964	36,590	4,935	46,049	43,905	4,939	4,835	800	8,713	8,218	1,762	993	19,952	36,246	35,686	78.7	81.3	9,803	5,175	4,736	3,341
Denver & Rio Grande Western	June	2,333	5,200	321	5,798	6,103	1,039	1,151	91	1,060	1,051	228	172	1,872	4,412	4,586	76.1	75.1	1,387	758	637	758
	6 mos.	2,333	34,066	1,618	37,084	35,596	5,194	4,631	536	6,761	6,482	1,374	1,052	12,349	27,057	25,390	73.0	71.3	10,028	5,581	4,433	4,961
Detroit & Mackinac	June	232	196	....	200	247	43	40	5	20	18	9	4	39	115	107	57.7	43.4	85	44	38	55
	6 mos.	232	949	2	977	1,218	258	240	18	120	122	51	25	230	692	649	70.8	53.2	285	163	135	213
Detroit & Toledo Shore Line	June	50	508	....	524	577	92	84	3	67	62	19	13	183	368	368	70.3	63.8	156	42	34	57
	6 mos.	50	3,833	....	3,904	3,924	468	439	21	374	347	108	85	1,184	2,191	2,215	56.1	56.5	1,714	636	537	441
Detroit, Toledo & Ironton	June	464	1,179	....	1,236	1,432	213	238	27	261	264	67	28	359	918	1,006	74.3	70.2	318	180	132	194
	6 mos.	464	8,543	2	8,990	9,748	1,177	1,246	161	2,092	1,505	400	169	2,418	6,195	5,816	68.9	59.7	2,795	1,484	1,172	1,672
Duluth, Missabe & Iron Range	June	569	923	1	1,118	7,559	598	662	52	531	696	78	10	686	1,942	3,547	173.8	46.9	—824	139	—1,028	1,391
	6 mos.	568	13,088	5	15,171	21,047	3,667	3,727	365	3,971	4,145	466	55	6,616	15,076	16,121	99.4	76.6	95	1,337	—1,136	1,511
Duluth, South Shore & Atlantic	June	539	506	7	545	732	137	175	9	122	126	20	23	215	516	622	94.5	85.0	30	29	—21	39
	6 mos.	539	3,522	40	3,751	4,092	725	708	51	853	703	120	141	1,399	3,233	3,292	86.2	80.4	518	166	187	419
Duluth, Winnipeg & Pacific	June	175	465	1	471	405	91	80	4	69	62	2	5	184	356	324	75.5	80.1	115	37	20	19
	6 mos.	175	3,355	6	3,396	2,705	468	413	25	463	380	13	32	1,439	2,444	1,990	72.0	73.6	952	249	270	205
Elgin, Joliet & Eastern	June	236	1,443	....	1,842	4,776	365	386	36	644	628	102	34	695	1,887	2,812	102.4	58.9	—44	329	—140	502
	6 mos.	236	18,876	....	23,602	26,965	2,322	2,454	192	4,224	3,975	602	201	9,054	16,703	17,121	70.8	63.5	6,899	2,838	1,045	2,087
Erie	June	2,242	10,769	701	12,672	14,970	2,316	2,199	226	2,309	2,314	479	342	5,360	10,915	11,508	86.1	76.9	1,757	595	782	1,473
	6 mos.	2,242	75,451	3,754	86,020	88,335	11,273	11,025	1,353	13,874	13,472	2,782	2,114	35,121	66,271	66,861	77.0	75.7	19,748	8,878	8,552	8,839
Florida East Coast	June	571	1,614	437	2,272	1,869	363	329	42	496	377	75	73	948	2,035	1,773	89.6	94.9	236	Cr. 3	70	50
	6 mos.	571	13,626	4,754	20,333	17,226	2,200	2,041	245	3,022	2,659	457	444	7,017	13,878	12,527	68.3	72.7	6,455	2,062	3,183	2,439
Georgia Railroad	June	323	680	39	786	732	104	124	8	123	122	26	34	335	628	627	79.9	85.7	158	38	139	69
	6 mos.	323	4,257	209	4,875	4,807	716	735	53	758	737	155	200	2,015	3,906	3,768	80.1	78.4	970	237	848	871
Georgia & Florida	June	360	302	....	306	283	86	83	4	39	33	7	18	91	249	236	81.4	83.4	57	19	11	7
	6 mos.	360	1,760	....	1,785	1,724	521	501	21	209	196	44	107	526	1,452	1,395	81.3	80.9	333	111	84	105
Grand Trunk Western	June	952	3,764	220	4,317	4,763	892	858	55	909	872	91	74	2,051	4,108	4,065	95.2	85.3	209	304	—382	245
	6 mos.	952	24,817	1,233	28,181	29,592	4,407	4,091	303	5,256	5,385	545	448	12,785	23,924	23,386	84.9	79.0	4,257	1,773	980	3,148
Can. Natl. Lines in New Engl.	June	172	165	9	215	225	73	55	9	59	45	....	3	140	297	247	138.0	109.8	—82	24	—148	—84
	6 mos.	172	1,120	32	1,422	1,403	396	319	54	343	284	1	16	887	1,758	1,519	123.6	108.3	—336	141	—736	—506
Great Northern	June	8,314	17,074	1,463	19,870	21,938	4,519	4,535	345	3,511	3,423	637	424	6,261	15,540	16,435	78.2	74.9	4,331	2,543	1,414	1,115
	6 mos.	8,314	96,624	7,049	112,259	113,581	21,993	21,319	1,846	22,381	20,628	3,616	2,393	41,473	93,118	90,795	82.9	79.9	19,141	11,258	6,217	6,789
Green Bay & Western	June	224	308	....	313	316	95	111	6	44	44	14	20	82	254	281	81.1	89.1	59	31	—43	10
	6 mos.	224	1,820	....	1,871	2,083	436	522	32	237	222	85	125	508	1,399	1,474	74.7	70.8	473	259	115	276
Gulf, Mobile & Ohio	June	2,766	6,499	437	7,385	6,996	1,236	1,187	71	1,373	1,335	241	258	2,093	5,305	5,212	71.8	74.5	2,080	993	826	696
	6 mos.	2,822	39,403	2,422	44,738	42,985	7,310	6,985	577	7,881	8,061	1,438	1,533	12,905	31,699	31,758	70.9	73.9	13,039	6,135	5,019	4,345
Illinois Central	June	6,539	19,586	1,810	23,766	22,562	3,914	4,176	425	3,319	4,148	734	505	8,312	17,041	18,523	71.7	82.1	6,725	3,730	2,594	1,315
	6 mos.	6,539	121,130	11,154	147,600	142,539	23,337	23,255	2,184	25,150	25,606	4,375	2,967	54,281	111,811	112,030	75.8	78.6	35,789	20,220	12,853	14,525
Illinois Terminal	June	447	851	71	1,039	1,113	161	149	27	165	158	34	39	453	875	839	84.2	75.4	164	64	69	113
	6 mos.	454	4,835	455	5,933	5,946	904	865	160	937	895	206	245	2,495	4,908	4,711	82.7	79.2	1,026	545	383	485
Kansas City Southern	June	891	3,095	165	3,544	3,665	379	342	35	470	451	90	83	1,043	2,095	2,204	59.1	60.1	1,450	624	619	567
	6 mos.	891	20,519	901	23,372	22,448	2,589	2,254	194	2,794	2,761	512	515	6,679	13,301	12,816	56.9	57.1	10,071	4,823	3,952	3,816
Kansas, Oklahoma & Gulf	June	327	543	1	548	493	144	81	7	39	35	9	25	121	352	312	64.2	63.3	196	99	61	70
	6 mos.	327	3,508	8	3,542	3,340	582	339	37	244	216	52	158	768	1,899	1,543	53.6	46.2	1,643	839	589	731
Lake Superior & Ishpeming	June	156	74	....	83	516	67	71	9	50	43	11	2	62	194	255	232.2	49.5	—110	Cr. 20	—82	111
	6 mos.	156	1,147	....	1,367	1,670	314	305	56	347	300	66	12	438	1,179	1,196	86.2	71.6	188	181	55	172
Lehigh & Hudson River	June	96	243	....	243	263	47	42	92	30	25	9	13	80	180	171	73.9	65.1	63	24	25	20
	6 mos.	96	1,614	....	1,618	1,657	260	240	14	179	149	52	77	507	1,086	1,007	67.1	60.8	532	216	213	229
Lehigh & New England	June	184	768	....	774	823	82	105	7	127	116	38	12	192	446	475	57.7	57.7	328	189	182	192
	6 mos.	184	4,080	....	4,112	4,196	434	618	39	768	687	222	70	1,118	2,603	2,699	63.3	64.3	1,509	927	909	583
Lehigh Valley	June	1,220	5,005	303	5,635	6,601	872	1,106	95	1,048	1,234	108	137	2,341	4,644	5,266	82.4	79.8	991	317	616	660
	6 mos.	1,220	34,647	1,959	38,724	38,205	4,716	5,117	542	6,552	7,092	1,119	846	14,957	28,568	29,795	73.8	78.0	10,156	4,362	5,536	4,410
Long Island	June	365	1,114	3,098	4,418	4,914	599	609	86	775	881	119	13	2,086	3,641	4,059	82.4	82.6	777	485	32	84
	6 mos.	365	6,644	17,452	25,542	25,490	3,673	3,668	515	4,668	5,131	709	91	14,308	23,751	23,862	93.0	93.6	1,792	2,914	—2,509	—2,690

(Table continued on next left-hand page)



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REVENUES AND EXPENSES OF RAILWAYS

(Dollar figures are stated in thousands; i.e., with last three digits omitted)

MONTH OF JUNE AND SIX MONTHS OF CALENDAR YEAR 1952

Name of Road		Average mileage operated during period	Operating Revenues: Freight	Pass.	Total (inc. misc.) 1952	Total (inc. misc.) 1951	Operating Expenses: Maint. Way and Structures: Total 1952	Total 1951	Deprec. and Retirements	Maint. Equipment: Total 1952	Total 1951	Deprec. and Retirements	Traffic	Transportation	Total 1952	Total 1951	Operating ratio 1952	Operating ratio 1951	Net from railway operation	Railway tax accruals	Net railway operating income 1952	Net railway operating income 1951
Louisiana & Arkansas	June	756	2,080	66	2,223	1,936	360	389	19	262	226	73	70	572	1,338	1,327	60.2	68.5	885	386	418	186
	6 mos.	756	12,211	383	13,102	11,677	2,092	2,272	123	1,568	1,349	417	427	3,476	8,004	7,690	61.1	65.9	5,097	2,377	2,319	1,277
Louisville & Nashville	June	4,765	15,120	1,257	17,580	17,929	2,705	2,826	219	4,246	4,129	675	341	6,427	14,319	14,898	81.5	83.1	3,261	2,088	1,745	1,244
	6 mos.	4,765	98,726	6,983	113,436	110,029	16,231	15,779	1,320	24,397	23,400	3,923	2,026	40,419	87,018	87,379	76.7	79.4	26,418	16,581	12,960	9,694
Maine Central	June	981	1,732	160	2,062	2,110	460	440	25	357	395	65	20	754	1,665	1,676	80.7	79.4	397	227	197	196
	6 mos.	981	12,294	753	13,965	13,259	2,548	2,369	160	2,307	2,298	409	123	4,808	10,247	9,746	73.4	73.5	3,718	1,921	1,499	1,438
Midland Valley	June	334	178	....	181	161	50	66	6	20	19	3	5	68	149	163	82.5	101.3	32	14	12	—34
	6 mos.	334	985	....	1,001	1,040	309	271	37	127	99	15	30	377	883	790	88.2	75.9	118	95	—29	57
Minneapolis & St. Louis	June	1,402	1,783	5	1,850	1,615	363	445	33	274	256	76	118	582	1,449	1,484	78.3	91.9	401	198	175	19
	6 mos.	1,406	10,216	28	10,584	10,312	1,845	2,011	164	1,700	1,595	436	711	3,466	8,374	8,369	79.1	81.2	2,211	1,243	790	544
Minn., St. Paul & Sault Ste. Marie	June	3,223	3,419	106	3,731	3,446	788	891	46	581	660	97	76	1,267	2,836	3,050	76.2	88.5	885	245	595	123
	6 mos.	3,224	17,309	436	18,871	18,521	4,063	3,934	283	4,246	3,937	575	462	7,935	17,432	16,897	92.4	91.2	1,438	1,371	—26	180
Mississippi Central	June	148	209	....	212	219	48	39	2	27	27	3	13	58	156	145	73.5	66.2	56	28	19	29
	6 mos.	148	1,333	—1	1,354	1,307	264	247	13	160	172	19	79	370	932	899	68.8	68.8	423	210	150	155
Missouri-Illinois	June	172	411	....	415	449	77	71	4	81	64	20	9	109	291	274	70.1	60.9	124	68	68	63
	6 mos.	172	2,537	1	2,561	2,611	429	366	23	436	378	121	51	697	1,666	1,522	65.1	58.3	894	519	436	407
Missouri-Kansas-Texas Lines	June	3,242	5,926	385	6,860	5,876	957	988	97	995	925	225	246	2,427	4,953	4,835	72.2	82.3	1,907	798	790	333
	6 mos.	3,242	35,555	2,244	41,386	38,820	5,839	5,520	651	5,921	5,687	1,336	1,515	14,682	29,879	29,370	72.2	75.7	11,507	5,085	4,674	3,330
Missouri Pacific	June	6,950	16,319	1,167	19,505	18,218	3,486	3,582	320	3,848	3,789	712	449	6,917	15,354	15,803	78.7	86.7	4,151	1,498	2,060	909
	6 mos.	6,950	99,900	6,106	117,816	114,228	19,610	19,232	1,591	22,539	22,518	4,182	2,718	43,767	92,480	92,515	78.5	81.0	25,336	9,441	12,861	10,165
International-Great Northern	June	1,104	2,411	233	2,917	3,136	648	616	30	593	539	100	57	1,195	2,623	2,567	89.9	81.8	294	66	136	262
	6 mos.	1,104	16,111	1,169	18,949	18,751	3,988	3,966	213	3,405	3,199	600	347	7,388	15,921	15,663	84.0	83.5	3,028	745	1,420	1,343
Gulf Coast Lines	June	1,727	3,000	93	3,318	3,503	763	735	48	589	543	100	88	1,152	2,731	2,694	82.3	76.9	588	34	447	325
	6 mos.	1,727	20,522	542	22,443	21,909	4,432	4,507	293	3,268	3,407	558	530	7,151	16,235	16,505	72.3	75.3	6,208	2,471	2,645	2,203
Monongahela	June	178	585	....	589	857	81	103	10	61	86	8	1	227	381	486	64.6	56.8	208	52	11	161
	6 mos.	178	4,189	....	4,206	4,507	554	531	69	507	518	45	7	1,549	2,674	2,664	63.6	59.1	1,532	323	290	635
Montour	June	51	151	....	152	267	20	37	3	59	100	17	1	68	159	253	104.6	94.8	—7	38	41	34
	6 mos.	51	1,179	....	1,181	1,309	124	138	15	469	527	101	5	510	1,168	1,267	98.9	96.8	12	242	244	179
Nashville, Chatt. & St. Louis	June	1,032	2,705	172	3,147	3,015	629	657	44	461	490	124	120	1,156	2,488	2,523	79.1	83.7	658	333	344	259
	6 mos.	1,032	17,161	939	19,959	18,972	3,411	3,301	295	2,902	2,788	744	687	6,867	14,588	14,320	73.1	75.5	5,372	2,731	2,656	2,212
New York Central	June	10,703	42,974	11,723	63,031	66,632	9,438	8,377	845	12,918	13,233	2,294	1,080	27,535	54,159	55,739	85.9	83.7	8,872	5,236	2,803	4,302
	6 mos.	10,710	281,582	62,160	393,313	394,618	53,910	52,998	5,724	83,258	82,528	13,397	6,422	178,815	341,850	346,203	86.9	87.7	51,462	30,811	14,633	8,063
Pittsburgh & Lake Erie	June	221	1,384	72	1,578	4,406	391	514	41	875	1,433	247	75	965	2,531	3,682	160.3	83.6	—952	Cr. 171	17	653
	6 mos.	221	20,566	460	22,101	24,698	2,801	3,039	248	6,682	7,106	1,424	437	8,155	19,429	20,556	87.9	83.2	2,672	2,818	4,241	4,209
New York, Chicago & St. Louis	June	2,184	10,509	181	11,157	13,025	1,327	1,571	137	1,813	2,333	330	304	4,252	8,160	9,329	73.1	71.6	2,998	1,513	1,283	1,686
	6 mos.	2,186	73,766	1,093	77,452	78,474	9,390	8,969	858	12,801	13,316	1,973	1,837	27,393	54,068	54,674	69.8	69.7	23,384	11,906	10,156	10,746
New York, New Haven & Hartford	June	1,793	7,046	4,769	13,293	13,094	2,207	2,126	286	2,073	2,163	376	194	5,350	10,497	10,658	79.0	81.4	2,797	998	902	531
	5 mos.	1,793	46,036	25,446	80,469	77,283	12,518	11,772	1,643	12,649	12,680	2,234	1,162	33,960	64,560	63,060	80.2	81.6	15,909	6,326	4,670	3,317
New York Connecting	June	21	202	....	231	263	97	123	26	24	20	....	....	75	198	223	85.9	84.7	33	83	—36	17
	6 mos.	21	1,836	....	2,001	1,648	491	541	151	176	96	....	....	487	1,171	1,063	58.5	64.5	830	499	396	334
New York, Ontario & Western	June	541	578	8	611	603	135	129	22	78	91	23	25	259	527	580	86.3	96.0	83	37	—25	—83
	6 mos.	541	3,281	10	3,417	3,672	671	647	138	491	522	137	154	1,560	3,061	3,204	89.6	87.3	356	214	—219	—166
New York, Susquehanna & Western	June	120	405	38	460	460	58	55	5	54	50	11	9	193	337	331	73.2	72.0	123	31	57	52
	6 mos.	120	2,378	230	2,739	2,796	341	320	33	362	317	68	53	1,191	2,111	1,993	77.1	71.3	628	188	242	319
Norfolk & Western	June	2,135	14,160	508	15,395	17,319	2,371	2,383	283	3,461	3,734	593	295	4,476	11,232	11,905	73.0	68.7	4,163	2,953	2,107	2,577
	6 mos.	2,135	92,087	2,633	99,870	98,458	14,005	13,616	1,759	22,945	20,706	3,513	1,793	30,000	72,370	69,233	72.5	70.3	27,499	19,268	13,037	14,063
Norfolk Southern	June	643	954	....	966	955	209	189	14	128	122	24	49	294	763	740	78.9	77.5	203	83	74	72
	6 mos.	643	5,802	....	5,892	5,573	1,188	1,019	79	724	685	139	284	1,826	4,471	4,201	75.9	75.4	1,421	662	482	440
Northern Pacific	June	6,881	12,653	671	14,446	14,825	2,834	2,620	317	2,384	2,637	64	307	5,127	11,336	11,460	78.5	77.3	3,111	2,086	1,280	839
	6 mos.	6,885	70,853	3,500	80,981	79,720	14,449	12,806	1,687	16,986	16,177	2,418	1,825	32,507	69,872	66,028	86.3	82.8	11,109	8,236	4,793	5,923
Northwestern Pacific	June	331	1,184	3	1,218	1,037	223	214	10	114	131	5	5	418	776	796	63.7	76.7	442	220	113	51
	6 mos.	331	6,110	45	6,346	5,520	1,582	1,353	106	630	629	25	32	2,410	4,751	4,578	74.9	82.9	1,595	672	238	101
Oklahoma City-Ada-Atoka	June	132	85	....	86	98	24	24	3	3	4	....	2	27	60	55	69.9	56.0	26	9	4	17
	6 mos.	132	586	....	591	588	142	130	14	28	26	....	11	138	345	319	58.4	54.3	245	109	69	79
Pennsylvania	June	10,120	53,141	13,332	74,467	89,610	9,788	11,391	1,354	16,472	21,322	2,982	1,232	33,594	64,393	73,451	86.5	82.0	10,074	5,626	3,065	6,467
	6 mos.	10,120	374,703	80,894	506,554	504,463	69,264	61,909	8,167	114,383	129,738	15,214	7,947	223,826	435,801	441,939	86.0	87.6	70,753	33,988	28,906	20,411
Pennsylvania-Reading Seashore Lines	June	364	571	216	818	944	210	207	25	102	89	15	12	542	907	959	110.8	101.6	—89	130	—359	—260
	6 mos.	364	3,615	843	4,634	4,679	1,274	1,339	153	562	557	92	64	3,229	5,347	5,584	115.4	119.3	—712	674	—2,118	—2,268

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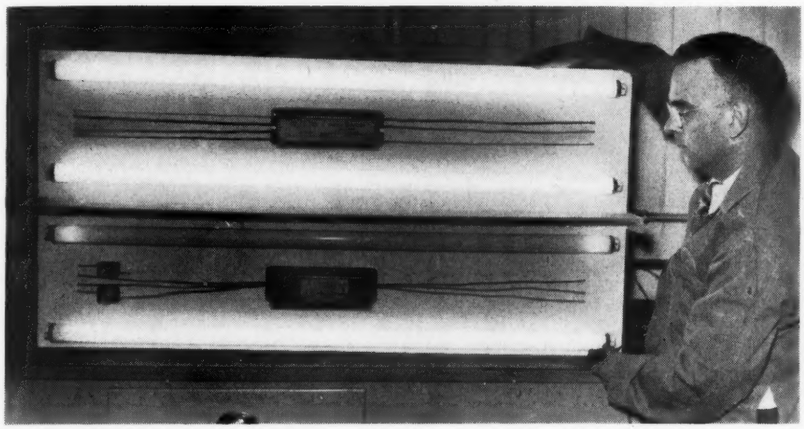
REVENUES AND EXPENSES OF RAILWAYS

(Dollar figures are stated in thousands; i.e., with last three digits omitted)

MONTH OF JUNE AND SIX MONTHS OF CALENDAR YEAR 1952

Name of Road		Average mileage operated during period	Operating Revenues: Freight	Pass.	Total (inc. misc.) 1952	Total (inc. misc.) 1951	Operating Expenses: Maint. Way and Structures: Total 1952	Total 1951	Deprec. and Retirements	Maint. Equipment: Total 1952	Total 1951	Deprec. and Retirements	Traffic	Transportation	Total 1952	Total 1951	Operating ratio 1952	Operating ratio 1951	Net from railway operation	Railway tax accruals	Net railway operating income 1952	Net railway operating income 1951
Pittsburg & Shawmut	June	97	193	....	194	206	42	45	4	49	47	9	3	52	156	160	80.8	77.6	37	6	58	35
	6 mos.	97	1,076	....	1,080	1,216	188	172	35	323	315	53	21	300	887	887	82.1	72.9	193	34	319	263
Pittsburgh & West Virginia	June	132	404	....	407	758	92	160	23	132	175	36	48	140	436	621	107.1	82.0	—29	Cr. 26	35	98
	6 mos.	132	4,093	....	4,132	4,362	653	818	139	1,058	1,025	204	308	1,099	3,274	3,509	79.2	80.4	858	499	617	669
Reading	June	1,321	7,885	558	8,996	10,575	1,524	1,758	212	1,756	2,384	409	147	3,777	7,591	8,829	84.4	83.5	1,406	795	841	911
	6 mos.	1,322	57,196	3,487	64,853	63,820	9,280	9,099	1,249	12,964	13,271	2,357	906	25,493	50,967	51,035	78.6	80.0	13,887	7,448	7,068	6,377
Richmond, Fredericksburg & Potomac	June	118	1,445	631	2,237	2,407	391	289	24	327	265	65	21	698	1,567	1,439	66.8	59.8	780	420	245	271
	6 mos.	118	9,614	3,810	15,313	14,028	2,012	1,633	142	1,823	1,655	390	124	4,412	9,259	8,717	60.5	62.1	6,054	3,322	1,966	1,828
Rutland	June	397	340	17	432	502	83	82	10	74	71	13	20	220	424	435	98.2	86.6	8	30	—38	31
	6 mos.	397	2,248	114	2,815	2,918	488	516	57	508	500	88	116	1,376	2,641	2,780	93.8	95.3	174	176	—105	—167
Sacramento Northern	June	271	158	....	162	226	113	48	45	23	91	4	2	110	258	252	159.6	111.9	—96	15	—126	—68
	6 mos.	271	1,231	....	1,264	1,603	416	343	67	349	319	24	13	515	1,091	1,139	86.3	71.1	173	87	—23	238
St. Louis-San Francisco	June	4,601	9,234	594	10,681	9,822	1,666	1,686	163	1,797	1,717	472	304	3,781	8,034	7,944	75.2	80.8	2,647	1,201	1,330	792
	6 mos.	4,601	52,410	3,596	61,007	59,909	10,085	10,022	1,063	10,441	10,238	2,890	1,761	22,654	47,889	47,505	78.5	79.3	13,119	6,441	6,744	5,665
St. Louis, San Francisco & Texas	June	159	499	7	531	398	72	54	22	38	36	1	21	159	301	278	56.6	69.8	231	111	62	27
	6 mos.	159	2,484	41	2,692	2,376	307	290	41	220	219	6	121	925	1,646	1,619	61.1	68.1	1,046	352	380	174
St. Louis Southwestern Lines	June	1,569	5,427	34	5,689	5,683	759	764	54	654	714	99	168	1,679	3,459	3,690	60.8	64.9	2,230	849	1,117	708
	6 mos.	1,569	34,806	220	36,495	34,700	4,368	4,156	347	3,806	4,160	568	988	10,095	20,402	21,094	55.9	60.8	16,093	8,969	5,750	4,682
Seaboard Air Line	June	4,145	11,110	1,288	13,299	12,185	1,955	1,854	176	2,563	2,242	634	370	4,209	9,638	9,201	72.5	75.5	3,661	1,662	1,897	1,458
	6 mos.	4,145	71,087	8,978	86,409	78,442	13,073	13,020	1,039	14,660	13,329	3,358	2,214	27,562	60,928	58,298	70.5	74.3	25,481	11,536	11,981	8,665
Southern	June	6,306	17,402	1,893	20,902	20,702	2,858	2,962	356	4,228	4,535	777	435	6,861	15,279	16,216	73.1	78.3	5,623	2,373	3,126	1,736
	6 mos.	6,306	111,951	10,480	132,812	128,506	17,753	17,855	1,490	25,427	24,742	4,495	2,631	44,782	96,034	95,740	72.3	74.5	36,779	19,616	15,315	13,138
Alabama Great Southern	June	326	1,258	105	1,479	1,647	256	244	29	382	417	81	33	491	1,225	1,346	82.8	81.7	255	185	75	48
	6 mos.	326	8,317	569	9,701	9,687	1,436	1,397	119	2,318	2,361	486	203	3,156	7,499	7,788	77.3	80.4	2,202	1,472	734	715
Cinn., New Orleans & Texas Pacific	June	337	3,314	205	3,703	3,663	448	465	55	934	805	182	74	923	2,499	2,473	67.5	67.5	1,204	658	642	495
	6 mos.	337	19,919	1,339	22,489	22,092	2,735	2,711	217	5,138	4,654	1,054	428	6,015	15,115	14,492	67.2	65.6	7,374	4,825	3,081	3,196
Georgia Southern & Florida	June	397	561	94	718	652	156	173	7	74	68	10	8	228	484	477	67.4	73.2	234	17	95	38
	6 mos.	397	3,647	629	4,697	4,243	973	992	44	422	392	59	47	1,415	2,989	2,898	63.6	68.3	1,708	546	434	311
New Orleans & Northeastern	June	203	831	64	952	1,064	131	160	14	130	130	27	18	213	536	595	56.3	56.0	416	212	168	155
	6 mos.	203	5,106	351	5,841	6,527	898	984	87	751	737	164	115	1,417	3,454	3,620	59.1	55.5	2,387	1,569	752	940
Southern Pacific	June	8,102	41,435	3,769	48,594	44,296	5,269	4,936	935	9,772	9,110	1,598	785	17,334	35,235	33,970	72.5	76.7	13,359	6,092	5,829	3,351
	6 mos.	8,124	224,525	23,497	266,774	248,357	30,661	28,284	3,264	53,682	49,759	9,185	4,912	98,827	200,148	189,356	75.0	76.2	66,626	34,125	27,757	20,415
Texas & New Orleans	June	4,291	9,899	787	11,456	10,592	2,034	1,839	126	1,785	1,973	87	257	4,106	8,739	8,905	76.3	84.1	2,717	1,035	895	477
	6 mos.	4,291	64,449	4,443	73,824	68,377	11,375	11,118	747	10,809	11,033	525	1,555	25,519	52,619	53,001	71.3	77.5	21,205	9,582	6,447	4,963
Spokane International	June	152	251	1	267	233	57	53	2	19	20	8	5	69	166	146	62.0	62.5	101	13	73	31
	6 mos.	152	1,255	6	1,332	1,254	368	341	14	126	113	49	29	388	974	874	73.1	69.7	358	78	203	171
Spokane, Portland & Seattle	June	944	2,267	122	2,537	2,943	364	454	45	318	320	94	28	766	1,570	1,644	61.9	55.8	967	391	509	644
	6 mos.	935	13,307	568	14,759	14,356	2,414	2,318	382	1,913	1,763	546	164	4,636	9,666	9,117	65.5	63.5	5,093	1,873	2,729	2,919
Tennessee Central	June	286	326	4	354	409	94	85	6	65	71	20	12	131	325	331	91.9	80.8	29	25	—24	28
	6 mos.	286	2,383	16	2,541	2,490	614	520	32	404	119	116	70	851	2,071	1,986	81.5	79.8	470	154	134	171
Texas & Northern	June	8	104	....	116	115	4	67	..	8	16	2	1	27	45	122	38.5	106.1	71	32	27	—22
	6 mos.	8	578	.....	643	664	35	107	1	52	64	14	6	140	262	389	40.7	58.6	381	187	120	79
Texas & Pacific	June	1,834	5,625	422	6,595	6,308	985	868	100	1,084	1,070	253	176	2,137	4,708	4,550	71.4	72.1	1,887	467	1,212	739
	6 mos.	1,834	34,921	2,370	40,608	37,699	5,776	5,156	681	6,640	5,811	1,512	1,073	12,842	28,273	26,407	69.6	70.0	12,335	5,157	5,494	4,252
Texas Mexican	June	162	293	....	312	262	61	56	5	39	35	8	8	61	188	180	60.4	68.8	124	51	43	30
	6 mos.	162	1,647	....	1,757	1,676	435	391	35	194	192	50	50	356	1,155	1,124	65.7	67.1	603	265	212	209
Toledo, Peoria & Western	June	239	518	....	526	553	122	132	6	63	46	9	44	121	386	395	73.3	71.4	141	61	40	39
	6 mos.	239	3,375	....	3,424	3,507	563	567	37	294	242	55	262	771	2,099	2,086	61.3	59.5	1,325	620	467	399
Union Pacific	June	9,843	31,436	3,866	38,647	39,373	7,015	6,882	430	7,422	7,891	1,169	952	13,949	31,575	31,937	81.7	81.1	7,072	4,922	796	878
	6 mos.	9,859	195,245	19,765	234,707	237,969	36,761	33,579	2,551	45,223	45,733	6,984	5,769	85,919	186,879	182,196	79.6	76.6	47,829	32,945	8,693	12,506
Utah	June	110	72	....	73	86	22	17	2	44	46	7	1	38	112	108	153.5	124.9	—39	11	—35	—13
	6 mos.	110	739	....	742	490	134	101	12	297	289	37	5	379	859	701	115.8	143.1	—117	67	—131	—208
Virginian	June	611	3,318	2	3,448	3,705	466	489	58	889	847	173	44	772	2,275	2,277	66.0	61.4	1,173	778	582	689
	6 mos.	611	22,925	11	23,838	22,205	2,984	2,522	348	5,520	4,731	1,033	275	5,479	14,835	12,885	62.2	58.0	9,003	5,306	4,500	4,343
Wabash	June	2,393	7,693	447	8,834	8,691	1,271	1,338	156	1,351	1,234	341	292	3,625	6,920	6,834	78.3	78.6	1,914	813	698	568
	6 mos.	2,393	48,921	2,483	55,650	55,665	7,398	7,220	714	7,681	7,286	2,032	1,729	22,937	41,908	40,907	75.3	73.5	13,743	5,915	5,337	4,935
Ann Arbor	June	294	690	....	711	752	190	99	18	125	103	31	27	339	703	559	98.9	74.3	8	Cr. 12	9	79
	6 mos.	294	4,372	....	4,427	4,584	667	507	100	711	644	180	158	1,921	3,573	3,310	80.7	72.2	854	382	383	496
Western Maryland	June	836	2,503	11	2,681	3,944	321	537	45	701	789	173	83	991	2,252	2,793	84.0	70.8	429	300	374	688
	6 mos.	836	22,677	55	24,011	24,152	2,890	3,271	267	5,237	4,728	1,041	501	7,664	17,338	16,962	72.2	70.2	6,673	3,882	3,989	4,206
Western Pacific	June	1,193	3,678	343	4,153	4,390	719	632	69	592	614	93	159	1,203	2,920	2,869	70.8	65.4	1,233	557	633	706
	6 mos.	1,193	22,714	1,560	24,889	26,874	4,148	3,642	413	3,917	3,869	707	1,102	7,767	18,331	17,618	73.7	65.6	6,558	3,437	2,766	3,901
Wisconsin Central	June	1,046	1,994	55	2,184	2,674	428	381	38	380	427	64	71	981	1,961	1,985	89.8	74.2	223	150	—20	414
	6 mos.	1,046	13,717	241	14,823	15,018	2,220	2,079	227	2,754	2,828	388	433	6,348	12,377	12,256	83.5	81.6	2,445	896	713	725



Smooth-Start Fluorescent Lamp

Development of a new type of fluorescent lamp which improves upon the performance of lamps now in general use has been announced by the General Electric Company, Nela Park, Cleveland. The new lamps start quickly and smoothly without the aid of external starters.

Named "Rapid Start," the lamps are used with especially designed ballasts, and are intended only for new lighting systems. They are being made in the 40-watt size, most popular lamp for general lighting, and in the standard cool white color. Other colors are planned.

In a "Rapid-Start" lighting system, all lamps controlled by one switch will light promptly—within about one second after being turned on. The manufacturer states that the lamps will not blink or flicker at any time throughout their lives. The lamps operate in series, two on one ballast.

The lamps differ from the conventional preheat fluorescent lamps in two principal respects: they employ a complex, triple-coiled cathode, and a water-repellent coating to insure reliable starting under high humidity conditions.

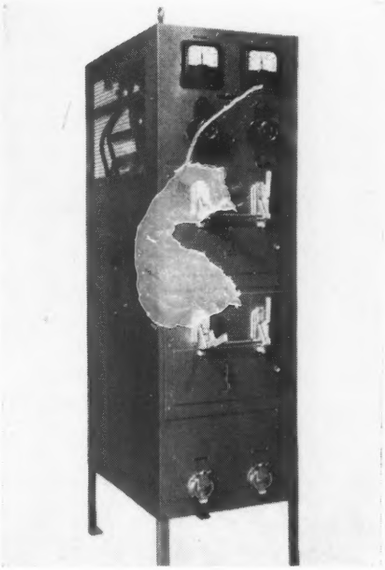
The illustration shows Eugene Lemmers, who was responsible for much of the development work on the new lamp, comparing the performance of two of the rapid start fluorescent lamps (top pair), with that of the conventional preheat lamps in general use today. The picture illustrates the comparative speed with which the improved lamps light up. As is shown, the new lamps require no external starters.

Non-Conducting Pails

A pail made of non-conducting material, called Ace-Hide, for protecting railroad, power plant, and industrial workers from electrical shock, is being made by the American Hard Rubber Company, New York. The material used to make the pail is a high strength, rubber-plastic blend.

The pails are being used on the I.R.T. Division of the New York City subways, and it is the experience of this user that the pails last over twice as long as previously used fiber containers. Typical uses include draining brake system reservoirs, and carrying liquids such as cleaning solutions and brake-line anti-freeze. Both fire and shock protection result from the latter application, as the inflammable alcohol-base anti-freeze could be fired by a short-circuit flash from a metal pail.

Ace-Hide, a rubber-styrene copolymer, in addition to being a nonconductor, is also resistant to concentrated solutions of most inorganic acids and alkalies, as well as to most solvents. It features a drip-proof spout that keeps the outside of the pail clean. The illustration shows one of the pails being used to drain a brake system reservoir on one of the cars of New York City's subway system.



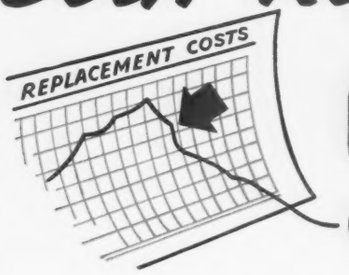
Battery Charging and Discharging Cubicle

A two-circuit battery cubicle has been announced by the Curtis Development & Manufacturing Co., 3266 North 33rd street, Milwaukee. Its design is based on the operating experience of a number of midwestern railroads.

The new unit, being of the two-circuit type, permits charging on one circuit and discharging on the other simultaneously, and is claimed to have increased the battery shop output approximately 55 per cent where it has been employed. The savings are effected in man-hours through elimination of attendant's travel time between batteries and controls.

Designed for use on batteries for railway car lighting and air conditioning, diesel-electric locomotives and motive power service, the cubicle is available in two models. Model No. 32 provides for manual control of charge or discharge of 32-volt batteries. The Model No. 64-110 cubicle is used for 64-volt batteries, and will also handle one 110-volt lead or Edison battery in split combinations on each circuit. Provisions are made for discharging the split combinations in series, or two 64-volt batteries may be charged or discharged independently.

Beat Replacement Costs...



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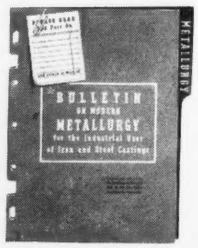
Gun Iron is a super-refined iron, highly resistant to frictional wear, high heat, pressure, and erosion. It combines outstandingly those engineering properties that spell long, economical service.

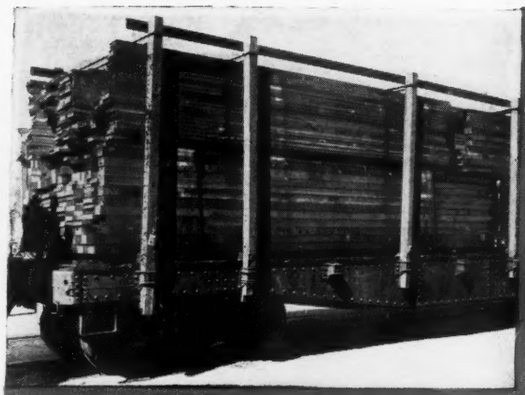
You can rely on diesel parts cast of Gun Iron to serve you better longer, to provide high-measure protection against costly operating failures. That means more than worthwhile savings in replacements. It means longer periods of trouble-free, economical operation, one of the keys to more profitable operation. Today, in the face of equipment shortages, high maintenance costs, long economical service takes on added importance.

For the most from *your* cast parts—to beat replacement costs, investigate economical Gun Iron. Our engineers stand ready to assist you in determining its value in your applications. **HUNT-SPILLER MANUFACTURING CORP., 379 Dorchester Ave., Boston 27, Mass.**

Canadian Representatives: Jos. Robb & Co., Ltd., 4050 Namur St., Montreal 16, P.Q.; *Export Agents:* International Rwy. Supply Co., 30 Church St., N.Y. 7, N.Y.

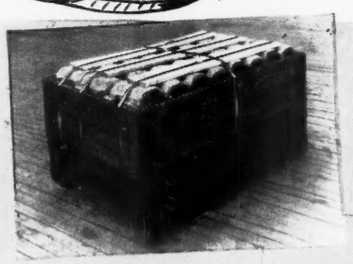


***HERE IS A PRACTICAL GUIDE** for the user of iron and steel castings . . . 24 pages of technical data on many types of metals and alloys. Write for your free copy.*



Lumber, loaded and strapped into unit bundles with Signode Steel Strapping as shown here, seldom goes to the rip track for readjusting.

Long rides on the rip track get you nowhere!



This tote box load of journal bushings is one of Signode's packaging methods widely used by railroads to handle supplies and stores, faster, easier and with greater safety.

Maintenance-of-way men like this Signode idea! Ties and other railroad timbers are strapped into unit bundles. That means easier handling, faster loading and unloading, and fewer accidents.

Railroads make less money when loads have long layovers on the rip track. Restowing and adjusting loads, such as lumber, eat up profits.

These costly bad order stops on the rip track can be reduced to short runs. How? By making sure that loading and recoopering crews know how to use steel strapping with maximum efficiency.

The personnel of rip track, freight house and stores departments' crews change frequently. Invite a Signode fieldman to brief today's crews on tested and approved methods on how to resecure bad order cars; install strong, low-cost bulkheads, brace stop-over, LCL and full carload shipments; apply retaining strips on doorways; and recoopering containers quickly. Write

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Benchmarks and Yardsticks

IT IS INTENDED to limit the discussion in this space strictly to the announced subject—that is, the varying aspects of the persistent problem of measuring the efficiency of performance of individuals and departments. Your reporter would be very happy to be able to print an algebraic formula for each railroad job and department—so a substitution of a railroad's own figures for the letters in the formula would give an unquestionable rating of the efficiency of the individual or department under examination.

The considerable correspondence that this department has generated, however, does not hold out much hope that such specific formulas are going to be easily found. Almost every comment that comes along suggests the addition of still another factor which should be included in the "yardstick"; and such factors usually can't be weighed in pounds, volts or calories.

Yet, in spite of the difficulty and complexity of the job of holding individual and departmental performance up to high standards (and, especially, of describing what these standards are), the fact remains that a great many railroads do succeed in getting the round pegs into the round holes; and usually, the greater their success in doing so, the greater success they have in running their particular railroad.

So the subject is of vital importance, and the fact of its being a hard one doesn't warrant dismissing it—but is all the more reason for keeping up the search. If we can't find a formula that's simple, we might, at least, by persistence, get hold of a "check list" which would be reasonably complete. That in itself would be a gain, because most mistakes that are made in assessing the performance of a department or an individual lie in the use of a bob-tailed yardstick. For instance, an operating department might look pretty good if gaged only by its ton-miles per train-hour; while its rating might be less spectacular if its on-time and undamaged deliveries to consignees were also taken into account.

It would probably never be practicable to rate people or departments on each and every important characteristic—but the job can be simplified by including in the "yardstick" qualities which imply other ones. For instance, if a man is rated "emotionally mature," it isn't necessary to inquire as to his sobriety.

Every large industry has the problem, not only of getting individuals to work together, but also of inducing its separate departments to work for the long-run welfare of the business as a whole, rather than for departmental goals only. Very few bull's eyes are scored by marksmen who don't even know what or where the targets are.

This effort to explore here in specific terms what the standards of first-class performance are will be successful in proportion as readers who have ideas on the subject will let us have them—your identity strictly protected, if you wish.

J. G. L.

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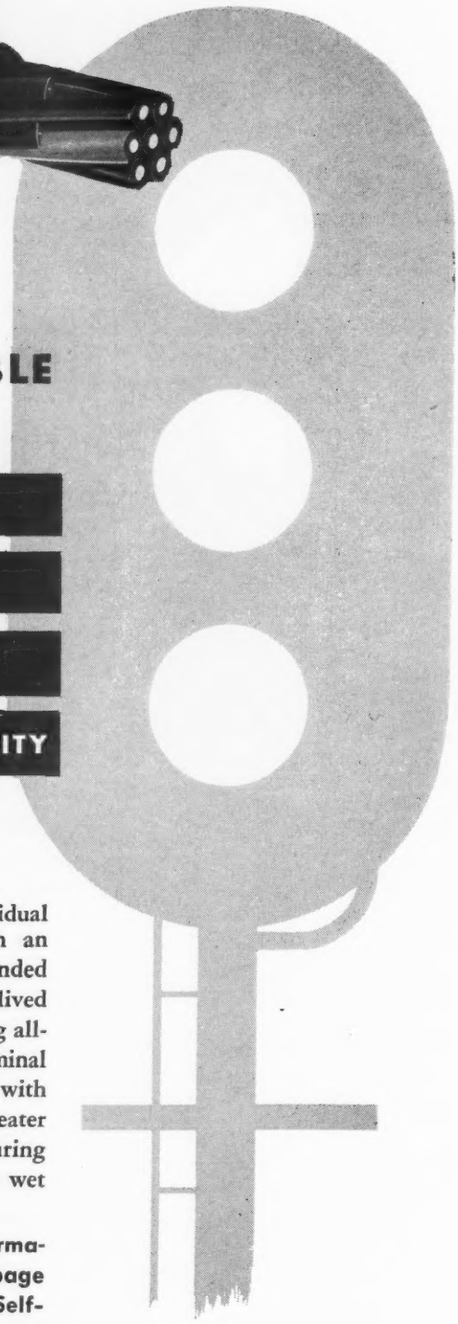

Okonite-Okoprene Self-Supporting Aerial Cable offers many advantages for railroad signal and communications lines where cost of underground circuits is prohibitive, where space is limited or where uninsulated overhead lines are not satisfactory.

With its light weight and great strength, Okonite Self-Supporting Cable allows longer spans with fewer poles and fittings. Its pre-assembled construction speeds installation. Its compactness eliminates congestion.

In addition to an all-over sheath of tough, weather- oil- and chemical-resistant Okoprene, each individual conductor is also jacketed with an Okoprene sheath permanently bonded to dense, moisture-resistant, long-lived Okonite insulation — thus insuring all-around protection at vital terminal points. These qualities—combined with strong mechanical design—give greater signal dependability—especially during emergency periods of prolonged wet weather, ice or high winds.

For full details, write for informative Bulletin RA-1033A, a 52-page manual on Okonite-Okoprene Self-Supporting Aerial Cable. The Okonite Company, Passaic, N. J.

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WHAT PRINCIPLES SHOULD GOVERN RATE-MAKING?

What theory or principles are the railroads following, or should they follow, in pricing their services? Or—perhaps it would be more accurate to inquire—what theory or principles are controlling the Interstate Commerce Commission in the rates it prescribes, or agrees or refuses to permit the railroads to apply? On another page in this issue is published an article by a transportation economist, J. A. Bliss, strongly advocating study by the railroads of the approach to pricing which has been so successfully applied by the electric utilities. In publishing Mr. Bliss' article, this paper is not accepting his argument as conclusive, but believes his information and analysis will be found interesting and important.

What Have the Utilities Got?

No analogy is ever an exact parallel, but the experience of the comparatively well-nourished electric utilities is certainly one which should excite curiosity on the part of the chronically starved railroads. What have the utilities got that the railroads haven't? Their rates are closely regulated by the state commissions—which, generally speaking, do not enjoy a notably better reputation for statesmanship or liberality than the I.C.C. does. Moreover, the electric utilities have been a direct and open target for the socializers to a degree never experienced by the railroads—or, at least, not for three decades. And yet, year after year, the electric utilities come up with a return on investment about double that of the railroads. As a consequence, the utilities are able to raise new investment capital in large amounts without apparent difficulty.

While each electric company is usually a monopoly in territory where it holds its franchise, it is always subject to actual or potential competition from the "isolated plant"—exactly the same kind of rivalry which the railroads suffer from private transportation by truck and barge. The parallelism, however, is not perfect. For example, the utilities' mass-produced power is conveniently available to the customer at all times in the same way that the electricity from an "isolated plant" is, while mass-produced railroad transportation is available only when the trains run, and not in instant response to the customer's demand—the way he can send out his private trucks if he has his own fleet. Since the analogy between the utilities and the railroads isn't exact, it follows that the utilities' rate-making approach could probably not be applied to the railroads' circumstances without substantial amendment. Some useful pointers, however, certainly can be derived from a study of the utilities' experience—and any such pointers should stand the railroads in good stead.

The classification of freight for rate-making purposes into categories which give weight to the "value of the service" has been accepted since the very beginning of the railroad rate regulation. The justification for such classification lies in the fact that allocation of "overhead" expenses is always an arbitrary act—and the assessment of the bulk of such "overhead" on the traffic that can pay it and still move makes more sense than assessing a pro-rata share of the "overhead" onto traffic which, if thus burdened, would not move at all. But what is just isn't always, *ipso facto*, practical.

A New Ceiling

Nothing has happened to destroy either the economics or the ethics of charging more of the "overhead" to high-value than to low-value commodities. What has changed is that *an effective ceiling has appeared on all railroad rates at the cost to the shipper of using some other form of transportation*, but the existence of this ceiling has not yet been adequately taken into account by the rate-makers. There was a lot of discussion of this important development back in the 'Thirties—much of which appeared in the columns of this paper and in which great assistance was received from the late Lube Orr. It looked as if remedial measures were imminent, but then along came the war. During the war and im-

mediately thereafter, when all forms of transportation, including the railroads, had all the freight they could carry pretty much regardless of charges, the question of the new ceiling on railroad rates became quite academic. There was plenty of traffic looking for movement at whatever rates might happen to be asked, and which would have moved at much higher rates if the Interstate Commerce Commission could have been persuaded to have allowed them.

The first and foremost rate problem of the railroads was then, and still is, that of getting a rule of rate-making into law (1) which will prevent the Interstate Commerce Commission—so long as railroad earnings are not higher on the average than those of other business—from substituting its judgment for that of railroad management in what level of rates is needed to bring average earnings up to the justifiable maximum; and (2) which will permit justifiable rate changes, upward or downward, to be made promptly. Justice unduly delayed is injustice.

For the long term, however, it is clear that realism in rate-making, by the railroads no less than by the I.C.C., must take more and more into account the fact that the rate ceiling is no longer located at the figure the shipper can afford to pay, but rather at the cost to him of other forms of transportation. This consideration has no applicability in "revenue cases" such as the recent Ex Parte 175, for the simple reason that prompt handling is of the essence in such cases. With the I.C.C. taking the many months it does to weigh the merits of a simple percentage increase, the time required to ponder and apply realistic ceilings to all the classifications would plainly run into years and perhaps generations.

For Long-Run Application

Some hard thinking, thorough discussion and comprehensive study about fundamental rate policy are in order, then, but not to "put out fires" in the solution of immediate problems. They won't. The need lies for the orderly development of a consistent policy for long-run application—more in accord with present-day facts than the "value of service" theory which, while still logically valid, appears to have lost a lot of its practical effectiveness in the light of the availability of alternative forms of transportation.

Tough minds and vigor in debate need to be brought to the forums on this question—if for no other reason than to encourage some show of sense in the regulatory handling of cases where competitive rates between rival agencies of transportation are at issue. When the low-cost carrier is denied the right to compete for business where its "inherent advantages" are obvious—and the public interest in a so-called "common carrier," which serves no intermediate points or handles only one or a few commodities, is conceived as equal to that of a carrier which serves all commodities and all points—then surely official thinking in the field of transportation principles has reached its nadir.

CORROSION ISN'T GETTING ANY LESS EXPENSIVE

Estimates have been made at various times of the cost of corrosion to the railroad industry. It runs into millions of dollars. It affects almost all types of mechanical department equipment and continues to shorten the life of many parts of cars and locomotives in spite of what many roads consider extensive research in materials and protective measures.

Reports dealing with corrosion in diesel engines and in air-brake equipment show that some of the most serious and expensive forms of corrosion are not always those that may be readily observed but may be those that work unseen.

The railroad industry's specific research into the matter of corrosion could hardly be classified as more than superficial. For years cars have rusted away both as the result of weather and of corrosive ladings. True, extensive study has been made by car builders, manufacturers of materials and equipment, and suppliers of protective coatings and finishes. But the destructive work of corrosion goes on.

In the mechanical field probably the greatest corrosion occurs with respect to cars; the expected life of most car parts is greater than that of locomotive parts, so many of which are removed from service as a result of wear rather than for other causes.

With respect to cars, the modern passenger car, in normal times at least, offers principally a problem in the economics of corrosion control, because materials and design experience are both available to protect this type of equipment from the elements.

Freight cars present a different problem, especially when it comes to equipment for carrying coal and other bulk shipments. Unfortunately, economy, false though it may be at times, has been the watchword in the acquisition of freight cars. If the economics of service life require it, even a hopper car can be so designed and the materials selected can be of such specifications that a substantial period of years may be added to service life at a reasonable increase in cost.

To determine what materials and protective finishes (or coatings) give the greatest length of service need not be a matter of guess-work. All reputable manufacturers have carried on research for years to such an end and many of them have joined in cooperative research ventures, where, under controlled research conditions with an experienced staff, the personnel of many companies has worked to one end—to find the correct answers; to find them as rapidly as consistent with accuracy of conclusions; and to project these answers into the future.

Rust, if it may be used as a symbol of corrosion generally, is a mighty expensive enemy of railroad equipment. A "railroad corrosion conference" held recently brought forth technical papers of a quality which indicates progress in combatting this enemy.

Maybe the Utilities Have Got Something in the Way They Make Rates

Customers get automatic reductions with intensive use—hence aren't tempted to use utility as mere "stand-by"

By J. A. BLISS

It has become an increasing practice in railroad circles to draw comparisons between the rates of return of electric power companies—which are adequate to attract new capital—and the grossly inadequate returns earned by the railroad industry. The assumption is that the two industries ought to yield approximately the same return to investors. This view is amply supported by many similarities between them.

Why stop with results? Why not compare methods? The two industries have radically different approaches to the problem of pricing their services. Isn't it possible, at least, that this difference in pricing policy may account for some of the difference in net earnings? The rate approach of the power companies—which boils down to a charge for capacity *plus* a charge for service—appears to have played a major and perhaps essential part in their progress and prosperity. Might not similar results be obtained with similar means on the railroads? Why not, for example, consider basing freight rates on a charge for the car *plus* charges per 100 pounds? Since this kind of rate-making has turned out to be a big earner for the utilities and an effective device in meeting competition, oughtn't its possibilities be looked into by the railroads?

The comparisons of earnings between railroads and utilities usually refer to the returns the electric utilities have been "allowed" to earn—implying that prosperity in transportation is within the gift of government but has been withheld from the railroads; and that the state commissions which regulate electric rates have been wiser and more generous than the Interstate Commerce Commission. Does the record sustain such a judgment as to the relative wisdom and generosity of the state and federal commissions?

Increases in rail rates since 1946 have been substantial and obvious. Contemporaneous increases in electric rates have been too small to measure. Nor are the utilities haunted by the questions that haunt the railroads when they do make general increases—how much of this proposed increase will be lost through loss of traffic? With the utilities charging as they do—a stand-by rate for capacity plus a separate charge for service—no foreseeable increase in either charge or both is likely to turn a manufacturer towards generating his own electricity, though he may be buying tractors and trailers to perform his own transportation.

The contrast between power companies and railroads is not simple. It is complex and paradoxical—few rate increases and high earnings on the one hand, increased rates and low earnings on the other. There are, of course, other factors than rates which bear on this situation—the larger labor component in transportation, for instance. In any event, the relatively sound economic condition of the power companies—sounder for investors, customers and labor than in transportation—cannot be credited to public policy. On the contrary, since 1932, federal promotional policy has militantly favored public ownership of electric utilities. Nevertheless, since 1948, investors have been demonstrating their confidence in the companies—in their ability to solve their problems and in their future—by furnishing them new capital, in the form of equities and long term bonds, amounting to well over a billion dollars each year.

Both Industries Face Competition

It might be objected that the utilities' theories and tactics would not work in transportation where there is much competition. But there exists a high degree of potential competition in the field of electric power. The leading electric rate-makers studied this competition thoroughly, even the "competition from natural light." But their devices have worked so well that many of the competitive struggles that gave rise to them have passed into history.

The railroad industry had grown to maturity and had become long accustomed to a complex rate structure before there was much need to consider the probability of a shipper performing his own transportation. But in the early days of electricity it was very likely indeed that large consumers such as factories would elect to produce their own power in "isolated plants" rather than purchase it from a central station. Thus, the power companies had a competitive problem right at the outset—it didn't confront them suddenly after they had grown up without it, as happened to the railroads.

On the other hand, there were many reasons why a central station—built primarily to provide lighting service—should offer lower rates for factory power. Various theories were advanced and various proposals were tried to encourage this development.

Classifications of various kinds and degrees of elaboration were tried, and ran into not only the difficulties inherent in any classification—Is current for a movie projector "light" or "power"?—but were vulnerable before the isolated plant salesmen who sought out the most profitable loads in any class. The so-called "two-part" rates, however, were low on "high-load-factor" business where isolated-plant costs would also be low, and were high when the costs of consumer-generated current would

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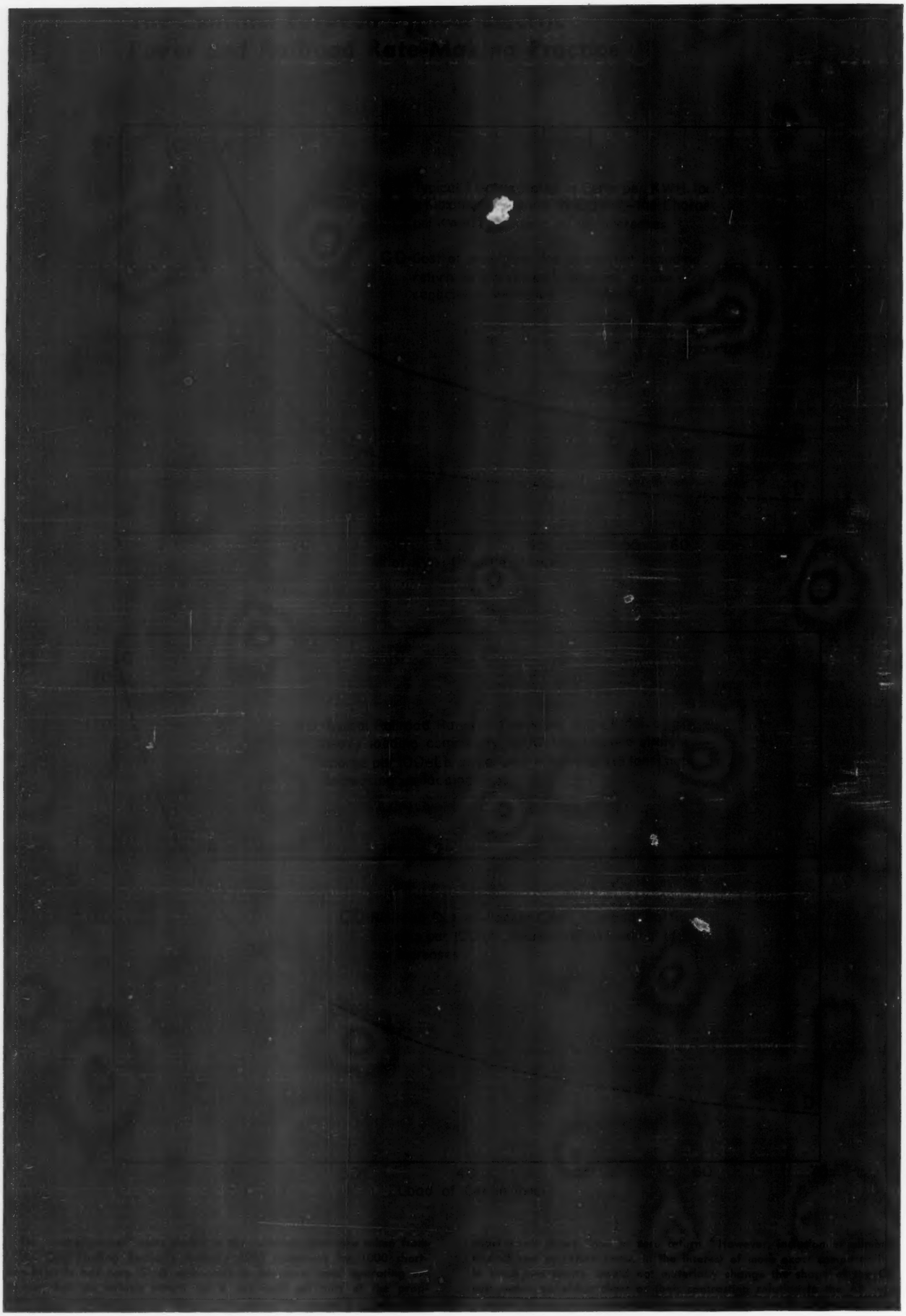
The author of this article is an I.C.C. practitioner and transportation economist, who would welcome comment and discussion of his proposals. He may be addressed at East Greenbush, N. Y. His ideas are not put forward dogmatically with the thought that they provide a complete panacea for the railroads' difficulties, but rather in the belief that factors in rate-making which have been so successful in the power business deserve rather more consideration by railroad rate-makers than they appear to have yet received. *Railway Age* publishes this article with the same motives that prompted the author to write it, i.e., as a contribution to constructive thought on long-term rate policy,—and decidedly not as an expedient designed to fit in any current rate case.—EDITOR.



also be high. This type of rate seemed to meet the competitive problem quite directly.

Since there are many special circumstances and not all isolated plants are competitive with the power companies, it is impossible to show just what portion of the total power market the central stations have taken; but (1) it is clearly a larger proportion than could have been anticipated 25 years ago, and (2) it embraces that part of the power market for which central stations are economically fitted (or, in transportation terms, for which the central stations have an "inherent advantage").

It would have been impossible to have achieved these results, if pricing policies had been substantially different from those actually followed. The technological advantages of central stations over isolated plants have never been great enough to afford them the opportunity to go out after unprofitable business which might have tempted them under other pricing theories. Even today, a quick way to ruin the power companies financially would be to force them to price their product as the railroads do, i.e. with "straight-line" rates which do not offer an incentive for increased utilization of facilities. No matter how skillfully "straight-line" rates were set up and classified, central stations would become "sitting ducks" for competition by isolated plants.

If only a few of the best customers were induced by such pricing to set up their own facilities for the "cream" of their power requirements, a vicious spiral would start —forcing higher rates on the business left to the central stations, hence widening the opportunities for still more isolated plants; and so on until mass production of electric power was threatened with ruin, just as mass transportation is now being threatened with ruin for similar reasons.

While their attention was focused on isolated-plant competition, most power companies neglected their opportunities in the domestic field. Even those that had used multi-part rates to compete with the Welsbach gas mantle tended to yield to a real or supposed popular preference for straight-line rates. During the decade 1916-25, the average price of domestic service did not vary much from 7½ cents per kilowatt-hour and the average use remained around 360 kilowatt-hours per year. (Corresponding figures for 1951 were 2.83 cents and 2,000 kilowatt-hours.)

To Samuel Ferguson of the Hartford Electric Light Company this was a "vicious circle of the worst variety. . . . Cost high because of small use—use small because of high price."

Breaking a Vicious Circle

Some public power projects broke into this situation by setting low domestic rates. There was a fine propaganda battle. Ferguson studied the underlying economic facts and possibilities. He found that low public-power rates enjoyed a subsidy while consumption was being built up, but that, with larger consumption per meter which the low domestic rates induced, these very low domestic rates could and did become self-supporting. A private company could not afford to make drastic initial reductions and wait until they became self-supporting, but it *could* use a two-part rate which gave reductions automatically, if and only if, consumption actually increased.

Thus he might give his customers the cheap and abundant electricity they craved (and which the public power advocates said they alone could provide) without asking his stockholders to forego a single dividend.

From the first trial in 1922, the plan was a spectacular success. But Ferguson had to spend an inordinate amount of time talking to women's clubs, business groups, labor unions, technical societies and other power companies overcoming their preference for straight-line rates and explaining his multi-part rates. Some of his comparisons, such as those with other companies which were making orthodox rate reductions, amount to scientific proof by controlled experiment of the superiority of multi-part rates—both in greater earnings for producers and lower costs to consumers.

It took time for such rates to become general. As Ferguson described the turning point: "One after another, the men around the table condemned me for setting an example in rates that were too low to live under. When they finished I replied—'Gentlemen, I will listen to the complaint of any one of you who will show a payment to his stockholders of a greater percentage of his gross receipts than I give to them.' No one could qualify and finally Mr. Tidd . . . spoke up . . . . 'We may not like Ferguson's method but I think we must admit that he is making more money than any of the rest of us.' From that time the nation followed. . . ."

The change came a little too late to forestall TVA and REA, but in time to prevent a clean sweep by public power. There are still some sharp political disputes over water power sites, and the power companies are not out of the woods in the sense that they can afford to become complacent. Certainly, they are unlikely to become so complacent that they will go back to straight-line rates.

Some General Comparisons

Subject to the probability that individual exceptions may be found, some general comparisons between railroad and electric company rate-making practices can be made, somewhat as follows:

1. Systematic rate-making, in obedience to a consistent theory which takes cognizance of all circumstances—and "practical" or "quarterback" rate-making—have been opposing forces in transportation, with the latter variety usually in the ascendant. Electric rate-makers—most of them engineers—saw rate-making as an art which could and should draw heavily on science, much as the art of engineering depends on the sciences.

2. Typical railroad rates are "straight-line" rates per unit of service rendered—the familiar rates in cents per 100 lb. Almost all electric rates are "multi-part." For convenience, even for psychological reasons, these "multi-part" rates take various forms. All consist in essence of (a) a charge for the electrical capacity maintained at the service of the customer which also reflects a "per-customer" charge; *plus* (b) a charge for the kilowatt-hours actually used. The average total price per kilowatt-hour will vary substantially with the "load-factor" or intensity of use. Within the limits set by the company, the customer can set his own average price by varying his intensity of use.

3. Electric rates are simpler than railroad rates. The Federal Power Commission National Rate Book is a single volume, smaller than many freight tariffs. This is primarily because one properly designed multi-part rate can do the work of an infinite number of straight-line rates.

4. For railroad transportation commodities are meticulously classified producing what has been called "the Encyclopedia Britannica, a Chicago mail-order catalogue and a United States protective tariff law blended into a single volume." Since Professor Ripley made this characterization in 1912 great efforts have been put forth to simplify classification, but not enough to offset the ingenuity of American business in devising new products, new forms and uses for old products, and new

patterns of production and distribution. With the power companies' kind of rate-making classifications can be confined, as Alex Dow put it, to "those indicated by common sense."

5. Railroad tariffs often involve "a difference in rates not based upon any corresponding difference in costs," Arthur Twining Hadley's classic definition of discrimination. Many such differences are substantial and deliberate, based upon differences in "the value of the service" or "the elasticity of demand." Dr. Hadley's ideas of "value of service" would have doubtless changed greatly with the availability of private transportation—but they continue in force today, substantially unchanged, while the circumstances which inspired this approach in the 1880's have been greatly modified by the appearance of alternatives which formerly did not exist.

While the doctrine of "beneficial discrimination" was often discussed in electricity supply, it never gained general acceptance. Most significant for comparison with transportation were the doubts which leaders of the industry felt respecting the benefits to the companies themselves of such justifiable discrimination. They considered the increased trouble and administrative expense and the risk they would run that the favored—and therefore less profitable—business would increase, while the more profitable business would be proportionately discouraged.

Element of Profit at Every Point

It seems evident from the position of electricity in modern life that the power companies have made a satisfactory adjustment to the marketing problems denoted by the term "value." The rate engineer has not forgotten "value of service" considerations. But he is not too confident that he is able to measure it—even to the extent that he measures cost. Most of the "value of service" decisions respecting electricity are made by the customers. If they see opportunities for bargains by intensifying their consumption—that is all right with the power company, because it has been careful to include an element of profit at every point in the rate structure.

6. Railroad rate-making often involves charging the same rate in spite of substantial variations in cost. A car loaded with 50 tons may be charged exactly the same per 100 pounds as if it held only 18 tons. By a simple corollary to the Hadley definition, this is also discrimination. Such failure to reflect significant changes in costs, when it is feasible to do so, is considered in electric rate theory to be a most dangerous form of discrimination. The power companies offer their customers, not the "equality" which some critics demand, "but equality of opportunity." As has often been noted, "equality of opportunity" has dynamic aspects which plain straight-line "equality" lacks.

7. Railway rate *theory* assumes a fixed size of plant. This is evident from the use of the term "constant costs." Electric rate-makers refer to "capacity costs" (or to "standing," "kilowatt," "demand," or "investment" costs) terminology which expressly recognizes the probability that some increase in capacity will be required as output increases. Attention is thus focused on the *ratios* between capacities and outputs, and rates are used to enlist the customers in the effort to improve these ratios.

How well this "joint venture" has succeeded is shown by the fact that in 1932 some 34 million kilowatts of generating capacity produced 77 billion kilowatt-hours, whereas in 1951 little more than twice the capacity produced nearly five times the output (370 billion kilowatt-hours). Stated differently, electric capacity was kept busy for 2,292 hours in 1932 and for 5,150 hours in 1951. With some exceptions, customers were free to throw switches on or off during 8,760 hours per year. This data compares with previous peaks of 3,184 hours in 1929 and 5,193 hours in 1948 or with 2,000 hours as approximating full time employment in an industrial plant. The economic triumphs of electricity are marketing triumphs, as much as—or more than—they are triumphs of physical technology.

8. Railroad rate theory does not aim at any particular *rate* of return, much less at the same return on every bit of business. Instead, there is an effort to get the *maximum dollar return* from the assumed fixed plant. The electrical concepts of capacity costs and capacity charges *require* the setting of a *rate* of return. Getting the same rate on every bit of business enters as an ideal, even though it cannot be achieved in practice.

There are other important differences between railroad and utility rate-making that might be noted—but to get to how multi-part rates might be applied to the railroads—

"Multi-Part" Rates—Application . . .

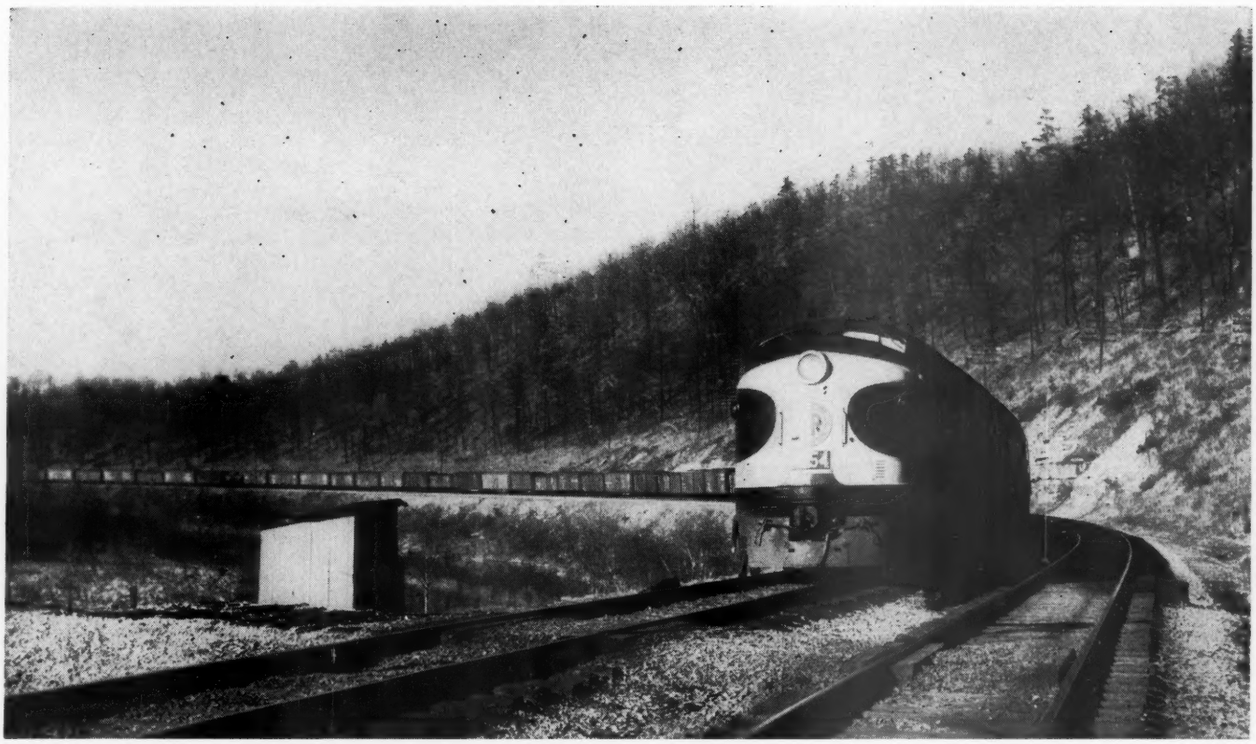
Multi-part rates in transportation could take many forms. In particular, there are several routes by which such rates could *gradually* be introduced. The easiest of the possibilities to illustrate are "Hopkinson" carload rates: specific per-car charges plus specific per 100-lb. charges.

The accompanying table is further simplified by limitation to a single rate-making distance and to a uniform size and type of car. Basis A is selected primarily for the simple ratio between the two components, but also is related to I.C.C. Cost Section "out-of-pocket costs" so as to make the lower (average) rates somewhat more profitable to the carrier. Basis B is designed to yield the same earnings per trailing gross-ton-mile for any load, assuming a tare weight of 47,500 lb.

EXAMPLE OF MULTI-PART RATES

	Basis A		Basis B	
TARIFF CHARGES:				
Per Car	$100		$76	
Per 100 lb.	10 cents		16 cents	
RATIO	1000 — 1		475 — 1	
EARNINGS: for net loads (lb.)	Per Car	Avg. per 100 lb. (cents)	Per Car	Avg. per 100 lb. (cents)
10,000	$110	110.0	$92	92.0
20,000	120	60.0	108	54.0
24,000	124	51.6	114	47.5
30,000	130	43.3	124	41.3
36,000	136	37.8	133	37.1
40,000	140	35.0	140	35.0
50,000	150	30.0	156	31.2
60,000	160	26.7	172	28.7
70,000	170	24.3	188	26.9
80,000	180	22.5	204	25.5
90,000	190	21.1	220	24.4
100,000	200	20.0	236	23.6
120,000	220	18.3	268	22.3
140,000	240	17.1	300	21.4

Light and bulky articles, despite efforts to load them heavily, would pay relatively high average charges. Heavy loading commodities would pay substantially less on the average, though the published charges would be exactly the same. In several respects the results of multi-part rates would not differ greatly from present patterns of rates, ratings and minimum weights. One multi-part rate, however, could replace an infinite number of straight-line rates and their corresponding minimum weights. Moreover, while straight-line rates are static, multi-part rates are dynamic, both in adjusting to changes however caused, and in furnishing incentives



"Why not consider basing freight rates on a charge for the car *plus* charges per 100 pounds? . . . Multi-part rates could take many forms."

for favorable changes—more effective use of equipment and reductions in costs.

The incentives to load more heavily could operate all along the line. Where loadings are now close to weight capacity, only minor improvements (with correspondingly minor price adjustments) could be expected, but even minor improvements could be important in the aggregate. Redesign of products, now rewardable only through formal tariff adjustments, would be encouraged by automatic compensation.

. . . And Effect

The greatest effect of multi-part rates would be on those commodities which are potentially heavy loading but subject to relatively low minimum weights and corresponding high rates. These are, of course, the very commodities most subject to highway movement. Semi-trailers have roughly one-third the capacity of box cars, but in many cases they actually carry minimum "carloads" of 30,000 or 36,000 lb.

If a semi-trailer operator, for-hire or private, can carry 36,000 lb. for $136 and continue operating, he will probably have enough other advantages to get the business as against a rail straight-line rate of 38 cents per 100 lb., carload minimum weight 36,000 lb. But at least 108,000 lb. of the same goods could usually if not always be loaded in a box car. Under Basis A as outlined in the table, the rail charges would be $208, averaging a little less than 20 cents per 100 lb. No trucker could meet this basis. There are, indeed, savings to multiple truckloads, either simultaneous or recurring. They sometimes determine the quantity and quality of highway service available to a given shipper and have some effect on rates. But they are not enough to justify running one unit down the highway for $136 and a second and third right after it at $36 each.

The railroad, on the other hand, would not only be better off than if 108,000 lb. had moved in three trailers, but better off than if the freight had moved in three carloads under a 38-cent straight-line rate.

There would be savings to the shipper from concentrating three truckloads into one box car, but not ordinarily the full $200 indicated by applying simple arithmetic to the above example. There are usually advantages to shipping in smaller quantities and these are often given as the determining reason—other things being equal—for highway movement. How difficult these relatively simple aspects of "value of service" are to measure is shown by those cases in which railroads have sought straight-line differentials under highway rates or costs, because inconveniences and expenses have made the value of their service less.

Multi-part rates would not attempt to ferret out and measure all of these "value of service" factors. Just as electric rates leave complex problems of value as compared to alternatives up to the customer, multi-part carload rates would leave complex questions of value in the light of production and marketing conditions up to the shipper's traffic manager who is best equipped to decide them.

Shifting to one car would be simple and the savings would approach the maximum if the shipper has been sending three trailer-loads a day to the same destination. These are the shippers most avidly courted by common and contract carriers and also most likely to operate their own transport. In other cases, expenditures for storage, gathering or redistribution would offset substantial portions of the indicated savings. There would be situations in which the proper decision would be to ship in smaller lots by highway. But the point where the savings disappear would be the boundary of "inherent advantage," defined by individual economic choice, and far better than by government decree.

By revamping an old tender from a Class "H" steam locomotive and installing a flash-type steam generator and related equipment in it, the Chicago & North Western has a versatile steam plant for many purposes.

C&NW Develops Mobile Steam Plant

Unit is intended for use by bridge and operating forces wherever a quick supply of steam is required

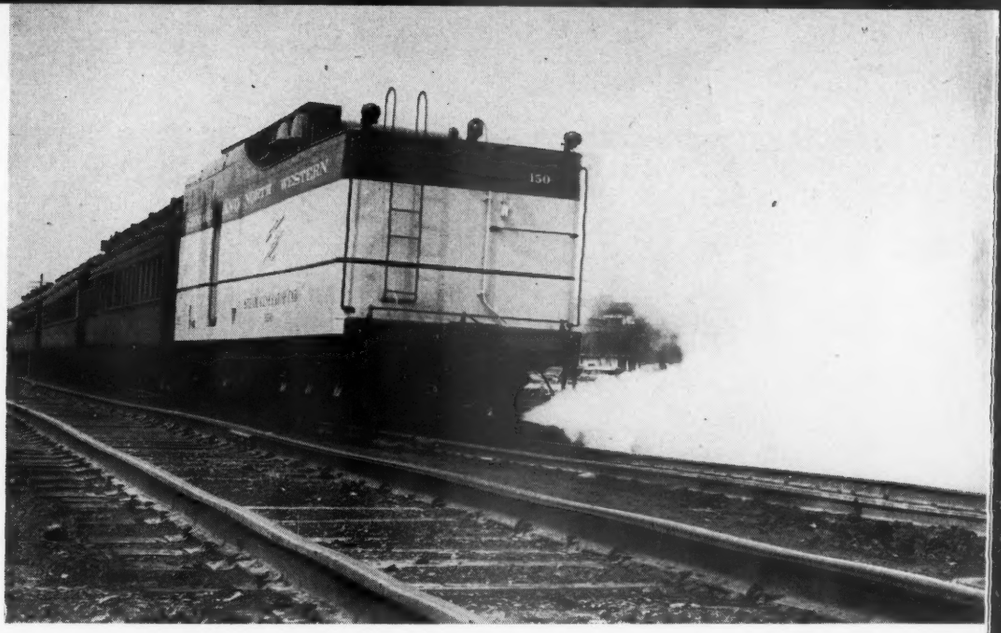
By converting an old steam locomotive tender into a steam generator car, termed Steam Generator Car No. 150, the Chicago & North Western has produced a mobile steam power plant which can be quickly utilized wherever there is a demand for a primary or secondary source of steam.

Some of the uses anticipated by the road for this versatile unit are furnishing steam for operating pile-driving hammers; propelling pile-driving rigs to and from the job; heating passenger trains hauled by freight diesels or augmenting the steam plants of passenger diesel units hauling and heating 18-car trains; heating and cooling special convention trains parked on out-of-the-way sidings; supplying steam for wrecker cranes; and supplying emergency steam heat for depots while their boilers are being repaired.

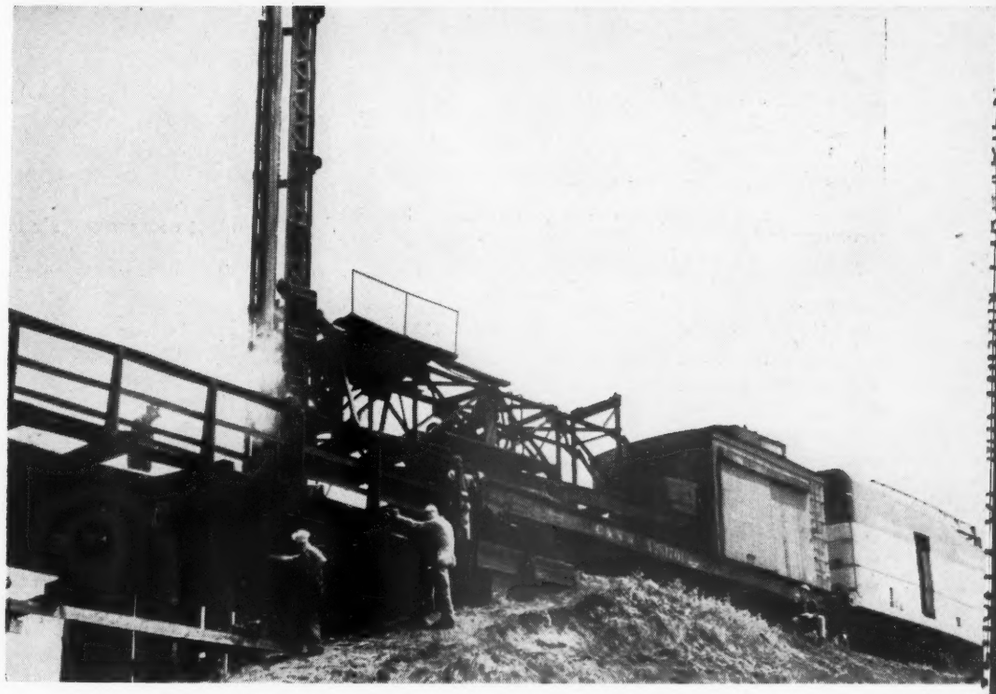
The tender was formerly used with one of the North Western's heavy-duty Class "H" steam locomotives—a class that is now being decommissioned as the road becomes more highly dieselized. Parts of the forward end of the tank were cut away to form a room with side doors for housing a flash-type steam generator, a diesel-electric generator, an air compressor, fuel and water storage tanks, and necessary related control equipment.

Near the center of this room (see floor plan) an automatic Vapor-Clarkson Model 4635 steam generator was installed. This is the same type of generator that is used on passenger-train diesels for supplying steam for heating the cars. This machine produces from 1,000 to 3,500 lb. of steam per hour at 75 to 300 p.s.i., which is sufficient to operate a large double-acting pile-driving hammer or to heat a train of average length. In two minutes this machine will develop 200 p.s.i. of steam pressure from cold water. Once started, automatic controls cause the machine to produce steam only when needed and in the amounts required.

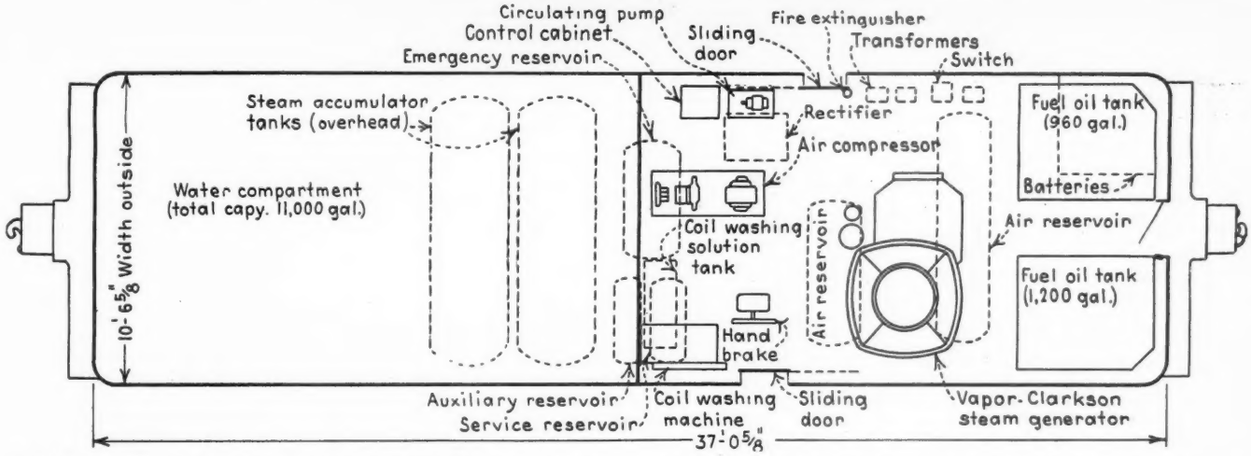
Two fuel tanks, with a total capacity of 2,160 gal., were installed at one end of the room and a 10-hp. Worthington two-stage air compressor, driven by an electric motor, was mounted near the other end. The compressor supplies sufficient compressed air to operate a small air hammer and for atomizing the fuel required by the steam generator. It can also be used to drive air saws and other air tools, as well as for operating the brakes of work trains. Brackets were fastened underneath the tender frame to carry a 25-kw. Waukesha diesel-



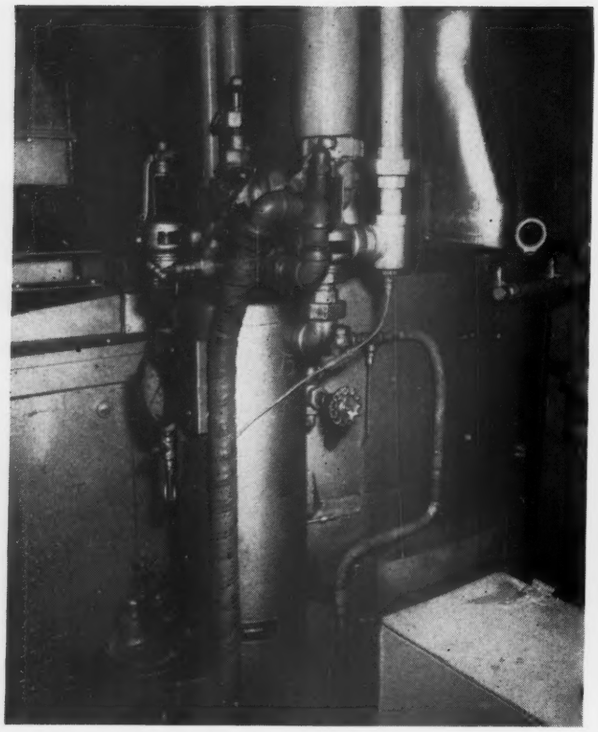
Here, Steam Generator Car No. 150 is being used experimentally for supplying steam to heat a diesel-hauled suburban passenger train.



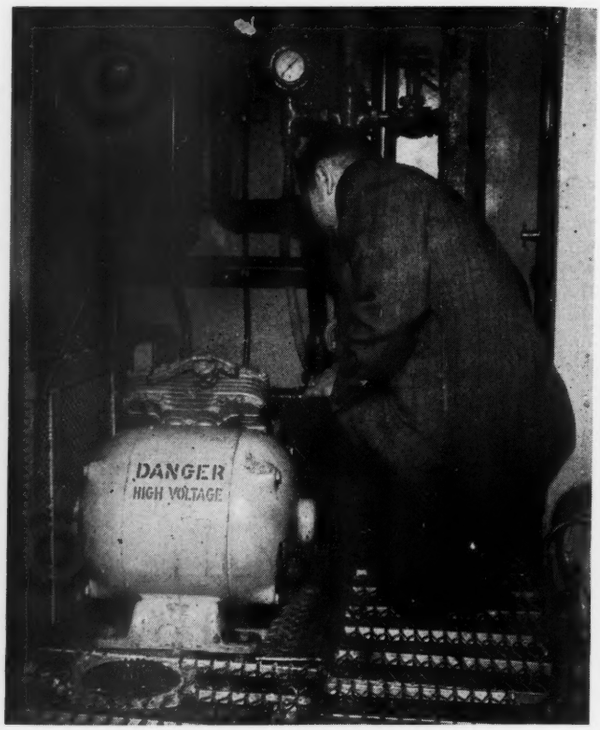
On its first pile-driving job, the steam-generator car was used over a period of two weeks without once having to stop work for refueling or for taking on more water.



In altering the old tender, a room was formed at one end to house the steam generator, air compressor, fuel tanks and electric controls. The other end provides storage for 11,000 gal. of water. Suspended beneath the tender frame, a 25-kw. diesel-electric generator provides current for motors on the air compressor and the steam generator.



A view of the flash-type steam generator as installed. A water-treatment tank was provided in case untreated water should ever have to be used.



This motor-driven 10-hp. air compressor provides sufficient compressed air to atomize the fuel used by the steam generator and to operate small air tools.

electric generator for making current (220/440 volts, a.c.) to drive a 5-hp. motor on the steam generator as well as the one on the air compressor, and for train lighting.

Two insulated steam accumulators, of 66 cu. ft. capacity at 300 p.s.i., are mounted on the top of the rear half of the car. These accumulators serve to smooth steam-hammer operation when driving piles. They have steam traps for returning the hot condensate to the water supply tank and for keeping the accumulators full of steam and at the same time eliminating the possibility of waterlogging.

The rear half of the steam-generator car is the water-storage tank, which holds 11,000 gal. This sizable supply, together with the 2,160 gal. of diesel fuel oil, permit this car to be used on pile-driving work for 10 days or more without refueling or taking on more water. This feature is expected to expedite construction work by eliminating frequent time-consuming trips for fuel and water, as was necessary with outfits equipped with steam boilers.

The fuel capacity of this car will also be used to good advantage when it is used with a diesel freight locomotive to heat passenger cars, as this car will be able to heat a train en route from Chicago to the west coast in mild weather without having to stop to be refueled along the way.

The steam generator also has special automatic "stand-by" keep-warm controls, which cause the generator to fire up every four or five hours and operate for about 15 minutes when idle in winter, thereby keeping the fuel and water warm in the tanks and eliminating the need for draining the coils.

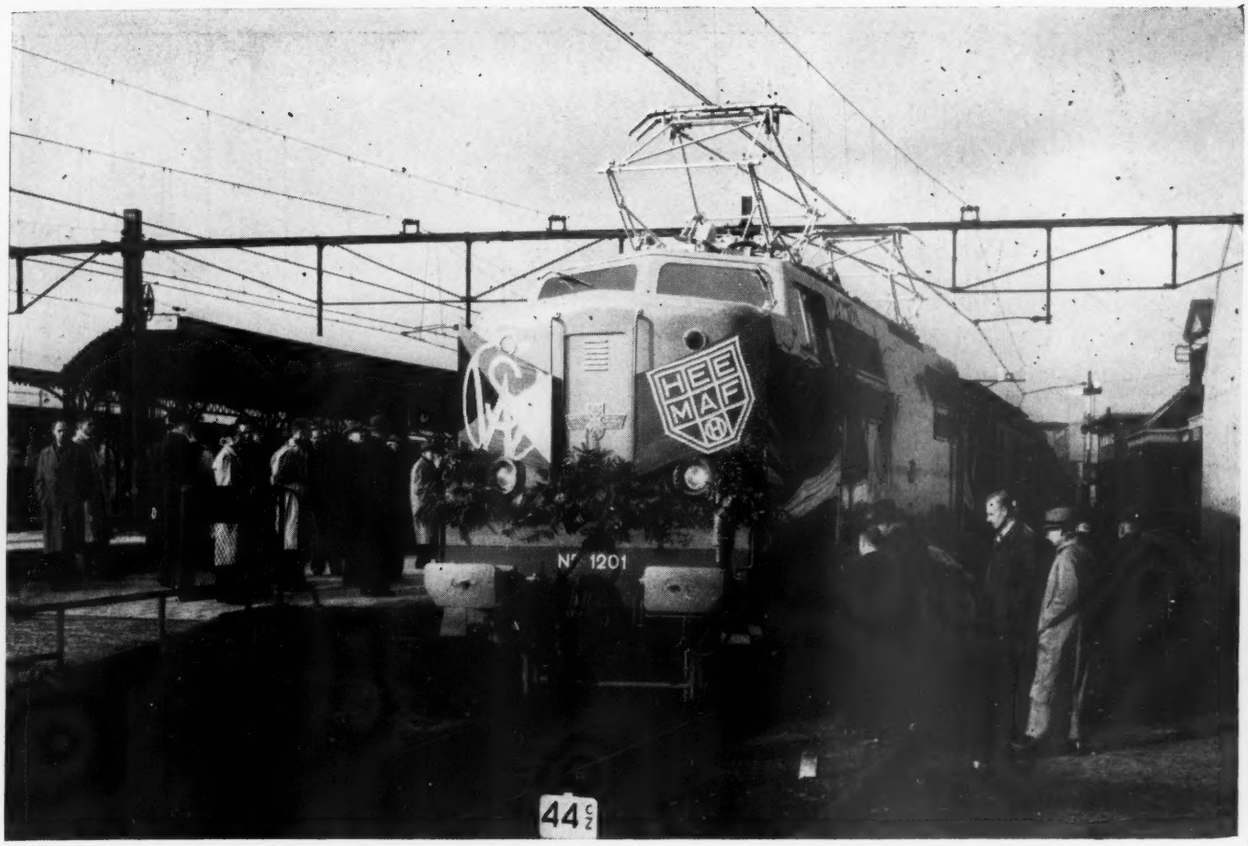
A water-treatment tank was installed next to the steam generator because, while treated water will be used when available, it may be necessary to use untreated water from streams at times. A complete coil-washout pump and tank were also placed in the car so that the coils may be properly serviced after the car has been out of service for any reason for any considerable length of time.

Steam Generator Car No. 150 has already been used on pile-driving jobs. One project involved the redriving and renewal of the pile-trestle approach spans to a single-track steel through-girder span extending over the two main tracks of the North Western's Galena division near the east end of the road's large Proviso yards west of Chicago. This operation required the driving of a total of 47 creosoted piles ranging from 36 to 55 ft. in length.

While it would have been possible to use the generator car for propelling the pile-driving rig to and from the bridge by means of a steam engine on the rig, either a diesel switcher or a yard steam locomotive was used for this purpose. The track on the overpass was a busy one, with the result that there were many interruptions to the work so that it was spread over a period of two weeks. During this period, however, it was not necessary once to refuel the car.

Controls on the steam generator were set to produce 200 p.s.i. of steam pressure for operating the double-acting steam hammer. This pressure was sufficient to produce 115 hammer strokes a minute. Steam was produced only as needed by the hammer or for the hoisting line, because the automatic controls regulated the firing of the generator.

The performance of Steam Generator Car No. 150 on this and another pile-driving job near Peoria, Ill., on a line operated entirely with diesel power, has proved satisfactory. The car also was used satisfactorily in an experimental way to heat a suburban train from the rear end when it was hauled by a diesel locomotive. A second steam generator car, which will be similar in design to Car No. 150, is now under construction at the the railroad's shops at Chicago.



At inaugural ceremonies held in Hengelo, Holland, to launch the first of the locomotives, F. Q. den Hollander, president of the Netherlands Railways, praised the new machine as "an example of simplicity." "It is much more difficult to be simple than complicated," he said. "In this respect we can . . . learn much from the Americans."

U.S. Electric Locomotives In Holland

A new series of electric locomotives which are the product of combined American and Dutch engineering skills are speeding up delivery of coal to important Dutch defense industries. A fleet of 25 of the new units is being built by two Dutch companies to American designs and with more than $1 million worth of American parts. Purchase of the parts was financed with the aid of the Economic Cooperation Administration (now the Mutual Security Agency) under the Marshall Plan.

The design of the electrical installation was provided by the Westinghouse Electric Corporation of Pittsburgh, while the mechanical design originated with Baldwin-Lima-Hamilton at Philadelphia.

The new units have begun to move, at the rate of about three a month, from the assembly plants of the two Dutch firms, N. V. "Heemaf-Hengelo," in Hengelo, and Werkspoor, in Zuilen, into the Netherlands Railways system. The entire 25-unit fleet is expected to be on the rails by the end of July.

The locomotives, designed especially for faster freight service, are helping to haul vitally needed coal from the Limburg mining area in southeastern Holland to the industrial centers of the west.

In these centers—Rotterdam, Amsterdam, Breda, Dordrecht, Schiedam, Gouda, Utrecht and others—are such important defense industries as shipbuilding, steel, machinery, motors, transformers and other metal-working factories, as well as railway equipment and power plants.

The Series 1200 locomotives, as the new units are called, are capable of a top speed of 90 m.p.h. without load, and 35 to 40 m.p.h. with a train of 1,650 tons. These speeds will substantially accelerate coal deliveries once the entire fleet is in service.

Besides the 25 Dutch-American units being produced here, expanding electrification of the Dutch railroad system also includes addition of 60 French electric locomotives of two different types and 10 Swiss-made units.

Because of the greater efficiency and economy of the electric locomotives, the railway management plans to retire from service 250 of its present 600 steam locomotives.

Loading superintendent shows how "D.F." loader cross member secures lading and in this case serves to separate crated portion of load from heavy castings.

U.S. Radiator Sectionalizes Loads To Prevent Damage

Traffic Manager Armstrong specifies "D.F." loader for rail shipments—Dunnage and loading costs reduced

A large part of the reduction in damaged shipments and in dunnage and loading costs achieved by the U. S. Radiator Company during the past eight years has been the result of that shipper's loading its products in box cars equipped with the Evans "D.F." loader, says F. J. Armstrong, the manufacturer's traffic manager.

Much damage in shipping and handling remains undetected until the merchandise is unpacked at destination, and sometimes the damage is not discovered until the product is put into use. U. S. Radiator feels it would be "ruinous" if some of the boilers it ships were put to use in a damaged condition. Hence, the manufacturer tries to take every precaution possible to get the shipments to destination in good shape.

Mr. Armstrong states that during the past eight years cars equipped with Evans loading equipment have been specified for all U. S. Radiator shipments by rail. He says further that in that period U. S. Radiator's claims have been reduced to the point where "they aren't a matter of concern to us any more." Also the manufacturer no longer must spend about $25 per car for dunnage, and another $25 for building the load.

U. S. Radiator used to concentrate its loads longitudinally in the center of the car. Now it builds car-width loads, divided sectionally each 10 ft. of the car's length. Each section of the load is held in place by the cross members which are part of the specially equipped cars. Thus, Mr. Armstrong says, "the shock is restrained by the cross members to 10-ft. sections, greatly reducing the possibility of damage to the load."

One end of a car nearly loaded with cast-iron radiator boilers. Because of the great weight which is involved in most of its shipments, U. S. Radiator normally builds its lading only one layer high.

Radiators of various sizes are being loaded into this car. Because few U. S. Radiator loads are more than 4 ft. high, cars usually have only three or four wall "belts" into which the cross members lock.

Loads can be built across car doorways. This car contains porcelain furnace and boiler jackets. Load is separated at top and bottom by spacing cross members.

Car load half-completed. In this heavy load of castings and furnace parts, "D.F." cross members are used in pairs for added strength or spacing between load units.

TV camera on platform of yard tower high above the B&O's Barr yard during tests. The camera—about the size of a home movie camera—is focused by remote control from the monitor set.

Monitor and viewing screen—Assistant Superintendent Charles Bertrand found that the camera picked up enough detail to enable him to appraise important aspects of activity in the portion of the yard within camera range.

A News Report on

COMMERCIAL TELEVISION—

A Coming Tool for Railroads?

Exploratory experiments demonstrate that commercial TV equipment may have practical applications in railroad operations

Use of newly designed commercial television apparatus as an additional supervisory and efficiency tool in railroad yard operations was probed in a group of strictly exploratory tests conducted in the Baltimore & Ohio's Barr yard at Blue Island, Ill., near Chicago, on August 5, under arrangements initiated by *Railway Age*. These preliminary tests, as reported briefly in last week's issue, indicate that application of commercial television apparatus to railroad operating problems possesses both practical and economic potentialities worthy of further investigation.

A variety of tests were conducted, including: (1) taking car numbers from freight cars on inbound yard leads; (2) overseeing general yard operations from atop a yard tower; and (3) inspecting running gear on cars —both from points beside and between the rails.

A feature of the equipment used for the test is the small size and light weight of the camera. Previously, TV cameras have been of the so-called "studio" type, both bulky and heavy. The RCA-Victor Camera used in the test, in contrast, is built around the newly developed Vidacon camera tube. The complete camera is only 10½ inches long, 4½ inches high, and 2½ inches wide, and weighs but 7½ pounds. The camera itself is not weatherproof, but when permanently mounted can be enclosed in a protected case, of which a wide variety are commercially available.

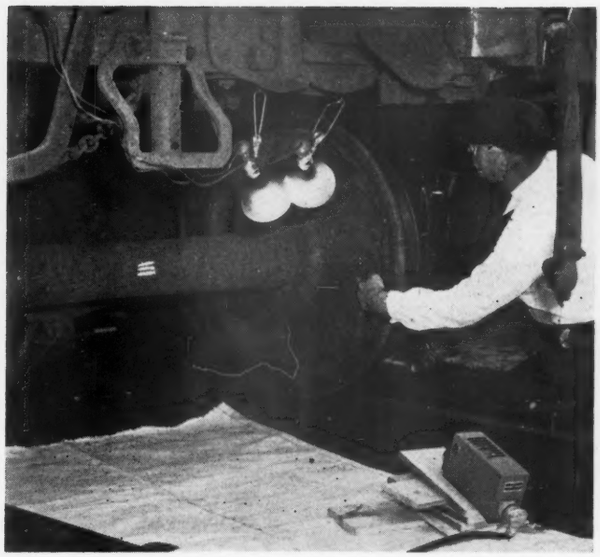
Lenses are not standard equipment on the camera because requirements vary widely; it is considered better for the user to purchase lenses best suited to his particular requirements. However, the camera is designed so that any type C mount, 16-mm., home motion picture camera lens—such as can be purchased at most photographic stores—can be used. Four different lenses, ranging from a wide-angle to a 4-inch telescopic lens, were used during the exploratory tests.

The camera is connected to a monitor unit by up to 50 feet of cable. The monitor unit has a 10-in. viewing screen, and buttons which can be used to focus the camera by remote control. In a permanent installation, up to four different cameras can be connected to a single monitor unit (though only one picture can be viewed at a time). Up to 10 different viewers can be connected by coaxial cable with the same monitor, each in a different location—up to a half-mile distant. Ordinary home TV sets can be used, without modification, as viewers.

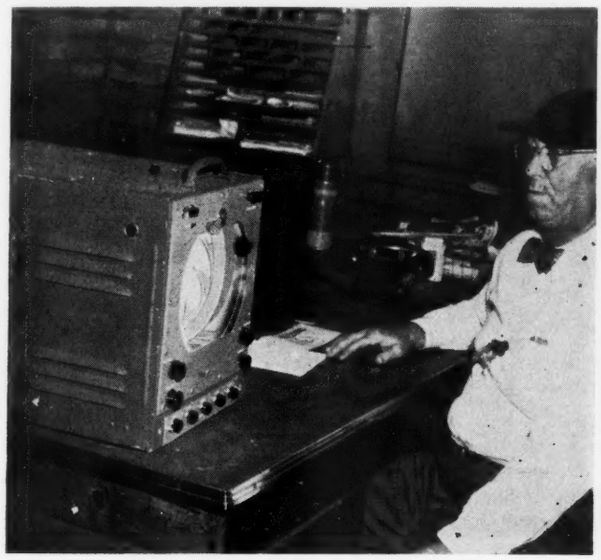
Thus, for example, three cameras might be mounted on a single tower overlooking a large yard, each pointing in a different direction, and each connected with viewers in the yardmaster's office, the terminal superintendent's office, the humpmaster's office, and any other desirable locations.

A simple installation consumes 240 watts of electrical power at 110 volts AC. In areas with poor line voltage, the equipment can be used by adding a constant-voltage

TV camera was placed alongside an inbound lead and used, with an observer at the indoor viewing screen, to take numbers on cars arriving in the yard. R. J. Miller, RCA-Victor sales development representative, is at the camera.



The camera was placed in different positions under a car to determine how much detail could be picked up on the viewing screen. Ernest W. Hott, car foreman, is pointing to a faint test scratch used in the experiment.



Foreman Hott appraises the detail picked up by the camera during tests on the nearby rip track. The area and the detail picked up by the camera is largely determined by the location of the camera and the lens used.

At the diesel shop, a Class T-3 steam engine was run over the pit and its tender used to test how much of the brake hanger rigging could be picked up by the camera from a below-the-rail location.

transformer. The equipment used is completely cable connected, though radio transmission can be used in circumstances where the additional expense, and the trouble of obtaining a federal license, can be justified.

The television camera requires a reliable source of constant light. Although the camera will function under a variety of different light conditions, the lens aperture must be adjusted to compensate for large variances. The tests illustrated here were made on a heavily overcast day between 10 a.m. and 4 p.m. Floodlights were used for the under car inspections. Just what performance could be obtained at night, or under adverse weather conditions (such as rain or snow), is problematical, because no tests have been made under such conditions. The equipment has obvious limitations in that a TV camera cannot see anything that cannot be seen with the naked eye. Thus a blinding rain squall or inadequate night lighting could blind the television eye, just as it does the human eye. However, for specific tasks such as taking car numbers or inspecting running gear, it seems probable that a properly mounted TV camera equipped with adequate artificial lighting might be able to perform at any hour of the day or night in any weather with reasonable reliability.

Equipment used for these tests was furnished by RCA-Victor, and is now commercially available. The established price for the camera (without lens) and monitor set, with 50 feet of camera cable, is now $5,500. The camera was operated during the exploratory tests by R. J. Miller, sales development representative for RCA-Victor, and J. Hovorka, field engineer for the RCA Service Company.

The Baltimore & Ohio Chicago Terminal volunteered the use of its Barr yard for the conduct of these exploratory tests. Charles Bertrand, assistant superintendent in charge of the yard, George W. Short, master mechanic,

The monitor while tests were being conducted in the diesel pit. Watching the monitor screen in Charles Bertrand, while George W. Short, master mechanic at Barr yard, assists in placing the camera in the pit.

and Ernest Hott, car foreman, contributed greatly to the value of the tests by their critical observations and suggestions.

The idea of exploring the use of television equipment in railroad operations—particularly in yard operations—can be traced to the American Association of Railroad Superintendents, which has discussed the desirability of such experiments at its past two annual meetings (*Railway Age*, June 16, page 70). Unfortunately, it was not possible to arrange a demonstration in time for the group's meeting in Chicago last June, at which time they inspected Barr yard.

Plans are now being progressed for a general demonstration early this fall, to which visitors will be invited.

WHEN "NET" IS NOT PROFIT

Railroad financial results and operating statistics, reported each month to the Interstate Commerce Commission, are compiled in accordance with the commission's prescribed accounting procedures and under its inspection and supervision. The figures of no other industry are subject to more careful public supervision and scrutiny to insure their accuracy. The railroad figures are matters of public record and are periodically reported to the press and the public.

The terms used, however, sometimes fail to convey to those not familiar with them a correct understanding of their meaning. Take, for example, the term "net railway operating income," a familiar item in statements of railroad accounts. The use in the same phrase of the words "net" and "income" might make it seem that this is a measure of the profit available to the owners of a railroad, rather than just an intermediate step on the way toward finding out what that profit is.

"Net railway operating income" represents what is left after subtracting from total revenues from the sale of services the amounts paid out for operating expenses, taxes, the use of joint facilities, and hire of freight cars and other equipment. The resulting figure is the base on which the rate of return earned on property investment or valuation is calculated. "Net railway operating income," however, should not be confused with the terms "net income" or "net profits," for the railroads have other obligations to meet before arriving at such end results.

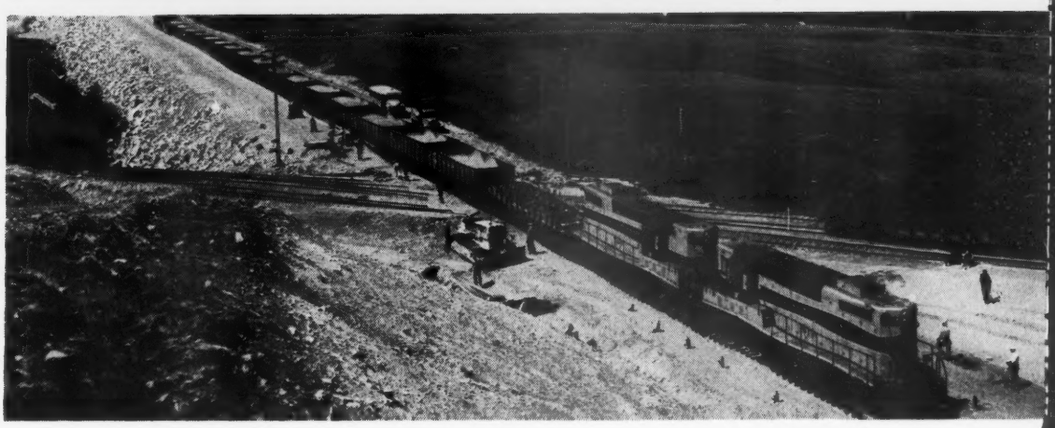
To find the profit it is necessary to go two steps farther—first, to add any income received from outside sources; and then to subtract fixed charges, principally interest on bonds, equipment trust notes and other indebtedness, and rentals for leased roads, which amount to nearly one-half as much as the "net railway operating income."

These necessary fixed charges must be met before any true profit can be arrived at. And even this profit is by no means all available for dividends, for out of it must come the funds to sustain the credit necessary to carry forward the program of additions and betterments so essential to continued improvement in railroad service.

—From a recent statement by William T. Faricy, president of the Association of American Railroads.

The westbound "Western Star" seen here crossing the 6,400-ft. fill, was the first train over the relocated line. The fill and cut in background made possible a tangent of 7,000 ft.

The contrast between the new and old alinements is emphasized by this panoramic view. The snow-capped mountains of Glacier National Park are in the distance.



Diesel-drawn work train dumping ballast for the relocated track. Ballast is crushed granite obtained from a quarry of the Great Northern in Montana.

This Short Line Change Is Long on Benefits

A line-relocation project recently completed by the Great Northern is producing benefits far out of proportion to its length of 3½ miles. As a result of the project the road's main line was shortened 602 ft.; a total of 203 deg. of central angle was eliminated; 10 curves having a maximum sharpness of 6 deg. were replaced by 3 curves of 1 deg., 1 deg. 30 min. and 2 deg., respectively; snow-drifting conditions will be alleviated at several points; and extension of a passing track to a length of 7,400 ft. was made possible.

Carried out at a cost of $1,000,000, the project involved a segment of the road's main line on the eastern slope of the Rocky Mountains in Montana. It provides a new alinement for a section of curved track between Spotted Robe and Triple Divide 17 miles east of the Marias Pass crossing of the Continental Divide.

The principal physical feature of the relocation is a fill 6,400 ft. long, which has a maximum height of 65 ft. This fill, along with a cut, made it possible to construct a 7,000-ft. length of tangent track. A creek which crossed the new alinement twice was diverted to one side by excavating a new channel. Material from the new channel provided much of the yardage required for the large fill.

Excavation estimates for the line as a whole included 263,200 cu. yd. of solid rock, 94,100 cu. yd. of loose rock and 210,300 cu. yd. of earth.

The excavation work was done under contract by Morrison-Knudsen, Inc., and the new trackage, involving 115-lb. rail, was laid by company forces. The ballast is crushed granite which was obtained from the company's quarry at nearby Essex, Mont.

1951 Railroad Construction Indices

The Engineering Section of the Interstate Commerce Commission's Bureau of Valuation has issued its Railroad Construction Indices for 1951, showing that last year's overall index for the country as a whole was 307, an increase of 19 points above 1950's 288.

The 1951 index was the highest of the bureau's series, which runs back to 1915, showing annual figures based on 1910-1914 costs as 100. Indices for the country as a whole are shown in the accompanying table. A notice from I.C.C. Secretary W. P. Bartel included this comment:

"There has been a revision in the per cent relationship of the accounts this year to reflect properly the growing importance of diesel locomotives. The small increase in the composite equipment index does not reflect the full increase in the price level of equipment, since greater weighting is accorded to the item of diesels which has a much lower index than those for freight-train cars and steam locomotives."

Accounts for which indices are shown are primary accounts which are designated in the Classification of Investment in Road and Equipment of Steam Roads, as follows:

I—ROAD:

1. Engineering
2½. Other Right of Way Expenditures
3. Grading
5. Tunnels and Subways
6. Bridges, Trestles, and Culverts
7. Elevated Structures
8. Ties
9. Rails
10. Other Track Material
11. Ballast
12. Tracklaying and Surfacing
13. Fences, Snowsheds, and Signs
16. Station and Office Buildings
17. Roadway Buildings
18. Water Stations
19. Fuel Stations
20. Shops and Engine Houses
21. Grain Elevators
22. Storage Warehouses
23. Wharves and Docks
24. Coal and Ore Wharves
26. Telegraph and Telephone Lines
27. Signals and Interlockers
29. Power Plants
31. Power Transmission Systems
35. Miscellaneous Structures
37. Roadway Machines
38. Roadway Small Tools
39. Public Improvements—Construction
44. Shop Machinery
45. Power Plant Machinery

II—EQUIPMENT:

51. Steam Locomotives
52. Other Locomotives
53. Freight-Train Cars
54. Passenger-Train Cars
56. Floating Equipment
57. Work Equipment
58. Miscellaneous Equipment

III—GENERAL EXPENDITURES:

71. Organization Expenses
72. General Officers and Clerks
73. Law
74. Stationery and Printing
75. Taxes
76. Interest During Construction
77. Other Expenditures—General

Acct.	Per Cent	1916	'17	'18	'19	'20	'21	'22	'23	'24	'25	'26	'27	'28	'29	'30	'31	'32	'33	'34	'35	'36	'37	'38	'39	'40	'41	'42	'43	'44	'45	'46	'47	'48	'49	'50	'51
ROAD																																					
1	2.64	110	134	159	178	214	175	157	171	171	166	166	164	161	160	152	143	131	127	131	131	133	142	138	137	140	151	175	186	187	197	216	245	271	270	276	298
2½	0.01	107	127	151	172	198	161	154	168	165	161	159	156	155	155	151	143	121	117	127	132	132	141	137	135	134	145	174	185	190	201	236	238	261	258	278	298
3	15.67	110	130	165	190	250	170	143	160	164	149	153	143	135	133	123	118	106	98	100	101	99	103	93	90	90	99	135	142	143	144	148	154	159	139	140	148
5	1.38	109	128	150	183	208	179	165	179	179	179	178	169	155	155	143	130	119	111	122	120	130	139	141	140	149	160	192	223	219	236	260	304	337	339	332	365
6	8.76	111	146	162	178	206	165	160	176	173	171	170	169	164	163	150	134	122	122	136	135	141	155	150	149	156	174	210	227	222	240	272	327	367	374	364	405
7	0.06	124	169	177	184	210	150	153	173	171	168	165	[illegible]	163	162	154	144	129	122	136	136	137	158	150	149	159	175	209	236	231	249	284	346	377	382	380	428
8	5.90	100	112	133	170	201	189	157	177	175	172	173	[illegible]	176	175	170	155	144	139	149	147	150	159	154	158	164	181	199	228	234	241	252	270	298	302	306	344
9	8.12	106	121	148	152	168	158	144	145	145	144	144	[illegible]	144	144	144	144	140	134	123	123	124	143	139	136	138	139	144	144	146	152	165	210	244	245	264	278
10	4.10	129	198	210	203	209	192	161	182	179	177	177	177	177	170	169	165	163	158	150	147	150	169	169	167	167	170	175	173	172	176	190	217	266	278	278	301
11	4.20	107	114	140	150	207	191	176	175	175	174	175	176	176	176	168	159	146	146	141	139	140	143	143	143	143	153	170	175	175	181	194	207	235	254	258	268
12	3.66	100	130	163	175	218	174	165	188	188	188	188	188	188	188	182	175	164	157	159	165	165	169	167	165	165	178	209	241	252	273	298	336	366	366	364	386
13	0.49	120	138	174	193	211	192	179	183	183	180	178	179	179	177	175	168	147	135	140	140	138	145	145	141	141	150	168	179	179	189	206	242	271	279	298	320
16	3.74	115	135	154	185	215	192	180	194	193	188	184	189	188	187	182	165	141	145	151	151	157	166	166	166	177	188	208	219	227	244	291	333	364	368	390	412
17	0.34	115	136	156	185	216	192	178	196	196	189	187	192	191	190	186	166	140	145	150	150	150	162	162	162	177	186	206	226	237	258	307	341	380	386	398	419
18	0.69	120	159	170	191	213	185	178	187	187	186	182	185	186	184	177	161	147	151	155	155	156	166	166	166	172	185	195	208	214	227	249	286	325	327	340	359
19	0.23	120	153	160	190	212	181	166	185	185	182	180	183	183	183	174	159	144	149	154	154	153	159	159	159	163	187	205	216	222	242	270	324	357	357	368	390
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29	0.15	122	141	158	189	218	197	184	196	196	191	186	191	191	189	177	162	138	143	148	148	152	167	167	167	176	194	204	213	219	246	296	354	375	386	407	436
31	0.52	145	174	189	190	207	175	164	180	174	175	176	176	179	183	175	149	143	143	147	149	150	154	148	148	153	162	167	171	171	180	201	240	258	266	289	310
35	0.04	117	137	156	186	217	192	179	195	195	190	186	191	190	189	182	164	141	146	151	151	154	161	161	161	168	178	183	198	208	229	290	333	372	378	399	421
37	0.19	113	127	146	158	170	162	149	151	151	151	151	151	149	148	147	144	138	138	147	147	147	161	153	154	158	169	169	187	187	187	222	244	267	280	295	319
38	0.06	100	179	179	184	202	181	170	173	185	190	190	191	191	190	160	155	155	150	150	150	160	170	180	180	180	190	200	200	200	200	245	280	310	315	353	380
39	1.17	108	137	161	182	208	171	164	178	175	171	169	166	165	165	161	153	131	127	139	137	139	152	145	142	146	163	198	208	203	217	236	278	316	321	316	347
44	0.88	126	155	192	200	210	198	173	183	185	185	186	187	189	191	176	166	155	155	179	179	179	198	200	202	212	224	224	228	236	236	271	300	319	324	346	374
45	0.41	126	155	192	200	210	198	173	183	185	185	186	187	189	191	176	166	155	155	168	166	171	180	177	180	189	194	194	190	190	191	217	240	240	242	262	284
Weighted Average																																					
1–45	68.40	110	134	159	178	214	175	157	171	171	166	166	164	161	160	152	143	131	127	131	131	133	142	138	137	140	151	175	186	187	197	216	245	271	270	276	298
EQUIPMENT																																					
51	3.60	102	145	189	202	248	192	179	197	185	171	191	190	179	188	194	184	168	166	176	188	188	201	201	201	215	230	255	265	265	265	290	313	326	326	326	342
52	6.76	117	137	184	184	217	197	196	198	199	192	194	202	203	221	221	210	175	165	185	190	190	198	199	190	190	203	185	173	173	173	185	189	192	190	186	195
53	11.08	148	183	243	267	284	184	156	200	179	171	163	178	169	185	181	161	144	144	165	177	180	191	190	198	204	218	239	254	254	254	300	320	343	360	371	401
54	2.70	104	132	164	197	213	169	152	192	187	183	189	191	180	183	181	178	161	161	173	182	182	195	195	194	200	213	230	240	240	240	285	305	327	343	353	381
56	0.28	125	164	227	245	239	200	175	170	170	170	170	170	170	165	158	148	148	158	160	160	171	171	171	176	188	207	220	229	238	256	275	280	281	283	294
57	0.52	128	165	225	244	263	193	168	203	183	188	180	192	184	195	191	178	165	165	177	180	180	197	197	200	208	220	247	254	254	254	292	315	338	348	365	394
58	0.09	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	150	155	165	180	180	192
Weighted Average																																					
51–58	25.03	130	166	219	240	265	185	163	198	182	173	174	183	174	186	185	170	153	153	169	180	181	195	194	198	206	220	242	254	255	255	294	305	323	330	325	333
GENERAL EXPENDITURES																																					
71–75 & 77	1.03	110	134	159	178	214	175	157	171	171	166	166	164	161	160	152	143	131	127	131	131	133	142	138	137	140	151	175	186	187	197	216	245	271	270	276	298
76	5.54	111	135	161	181	216	176	158	172	172	167	167	165	162	161	153	144	132	128	132	132	134	143	139	138	141	152	176	187	188	198	217	246	272	272	279	300
Weighted Average																																					
71–77	6.57	111	135	161	181	216	176	158	172	172	167	167	165	162	161	153	144	132	128	132	132	134	143	139	138	141	152	176	187	188	198	217	246	272	272	279	300
SUMMARY																																					
1–45	68.40	110	134	159	178	214	175	157	171	171	166	166	164	161	160	152	143	131	127	131	131	133	142	138	137	140	151	175	186	187	197	216	245	271	270	276	298
51–58	25.03	130	166	219	240	265	185	163	198	182	173	174	183	174	186	185	170	153	153	169	180	181	195	194	198	206	220	242	254	255	255	294	305	323	330	325	333
71–77	6.57	111	135	161	181	216	176	158	172	172	167	167	165	162	161	153	144	132	128	132	132	134	143	139	138	141	152	176	187	188	198	217	246	272	272	279	300
Weighted Average																																					
1–77	100	115	142	173	193	226	177	159	177	174	168	168	169	164	166	160	149	136	133	140	142	143	153	149	149	153	165	188	200	201	209	232	257	281	282	288	307

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Oil

● Mastering mountains is all in a day's work for such Denver and Rio Grande trains as "THE PROSPECTOR." Traveling between Denver and Salt Lake City over the famed Moffat Tunnel Route, this streamliner takes long mountain grades in stride.

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STANDARD OIL COMPANY STANDARD *(Indiana)*

(*Continued from page* 18)
stenographer. He came to Chicago as a chief clerk in the freight traffic department in 1946 and was appointed chief of the tariff bureau in 1949. He was advanced to assistant general freight agent at Chicago in 1950.

Alan B. Taylor has been appointed general freight agent of the UNION PACIFIC at Denver. **Millard A. Light** has been named general agent at Philadelphia and **John E. Atherton,** general agent at Eugene, Ore.

MECHANICAL

As reported in *Railway Age* June 2, page 102, **John H. Ray** has been appointed electrical engineer of the ERIE at Cleveland. Mr. Ray was born at Matamoras, Pa., 41 years ago and was graduated from Pennsylvania State College (1933). He joined the Erie as a special apprentice in the Susquehanna shops in 1934 and was advanced to leading machinist at Mt. Morris, N.Y., in 1938. The following year he was promoted to assistant electrician foreman

John H. Ray

at Hornell. After five years of military service Mr. Ray returned to his position in 1946, just as the Erie began intensive conversion to diesel-electric power. He worked in 1947 as diesel shop foreman at the Erie's principal diesel shops in Marion and spent most of the following year in the same capacity at Hornell. On November 26, 1948, Mr. Ray became assistant electrical engineer at Cleveland, the position he held until recently.

A. G. Hoppe, engineer of research and development for the CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC, has been appointed mechanical engineer, following the abolition of the office of engineer of research and development. **H. H. Melzer,** assistant mechanical engineer, has been named chief engineer of tests. **D. C. Sheffield** has been appointed engineer of tests (diesel). **G. H. Koester** has been appointed assistant to superintendent of motive power. All are headquartered at Milwaukee.

SPECIAL

As reported in *Railway Age* July 28, page 56, **Robert L. Barbour** has been appointed director of public relations of the CENTRAL OF NEW JERSEY at New York. Mr. Barbour, a partner in the New York public relations firm of Barbour & Hammesfahr, will head an expanded public relations program for the Jersey Central. Co-founder in 1947 of the firm bearing his name, Mr. Barbour has had long experience in serving commercial, industrial and transportation interests, both as a company executive and public relations counsel.

Robert L. Barbour

Edward T. Hurley, who has been with the CANADIAN NATIONAL since the opening of its research laboratory at Montreal in 1945, has been appointed controller of tests and materials research. In his new post, Mr. Hurley assumes direction of the thousands of tests conducted each year for quality evaluation of the $165 million worth of materials and supplies purchased annually by the railway; research into development of new and better products; checking and revision of specifications for CN system requirements; and scientific investigations for the claims department. Born at Vankleek Hill, Ont., Mr. Hurley was graduated from Queen's University, Kingston (B.Sc., 1933; M.Sc., 1934).

J. P. Andres, chief of police of the DELAWARE & HUDSON at Albany, N.Y., retired on July 31 at his own request, after 44 years of service.

OBITUARY

Clifford S. Beattie, 76, who retired in 1950 as vice-president and general counsel of the LEHIGH & HUDSON RIVER at Warwick, N.Y., died on July 29. Mr. Beattie was born at Warwick on June 4, 1876, and was graduated from New York Law School (1899). He entered railroad service in 1914 as claims attorney with the L&HR and served in that capacity until 1924, when he became general counsel. In 1926 Mr. Beattie was appointed vice-president and general counsel.

(*Continued from page* 15)
from special reports on free transportation which were filed pursuant to a commission order of December 12, 1950. A preview of the statement's showing was presented in a like compilation of figures for 1951's first quarter which was released by the commission several weeks ago (*Railway Age,* June 9, page 14).

The full-year statement of railroad totals included 2,769 term passes issued by the state of New Jersey. "These passes," it was explained, "are issued by the state . . . to certain public officials . . . and are good within the borders of the state on all railways operated within it. This is the only state that issues passes directly instead of requesting them from the railways."

The commission's bureau found it impossible to determine accurately the amount of free transportation provided by the railroads in 1951. "Some railway officials," it explained, "received a considerable number of term passes, some of which are never used. On the other hand, some term passes are used very frequently."

Technical Paper Awards At Pan American Congress

Awards for railroad technical papers to be presented at the Eighth Pan American Railway Congress when it mets in Washington, D.C., and Atlantic City, N.J., in June 1953 were announced August 5 by the organizing committee for the congress.

The Eric V. Hauser Memorial Award of $1,000 for the paper judged to be the most helpful to the science of railroading in respect to way and structures has been offered by William T. Faricy, president of the Association of American Railroads and chairman of the United States National Commission in the Pan American Railway Congress Association. Mr. Hauser, father of Mrs. Faricy, "was one of the outstanding railroad builders of his time and is well known for the part he played in many other construction projects," the committee's announcement said.

Three prizes totaling 50,000 pesos (about $3,600) for the authors of papers on railroad subjects have been offered by the Argentine government. These awards include 25,000 pesos for the best paper on railroad planning and coordination, 15,000 pesos for the outstanding paper on railroad operation,

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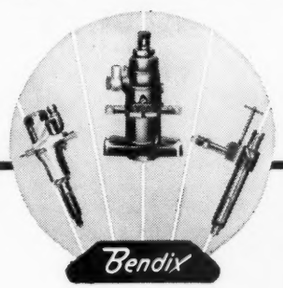
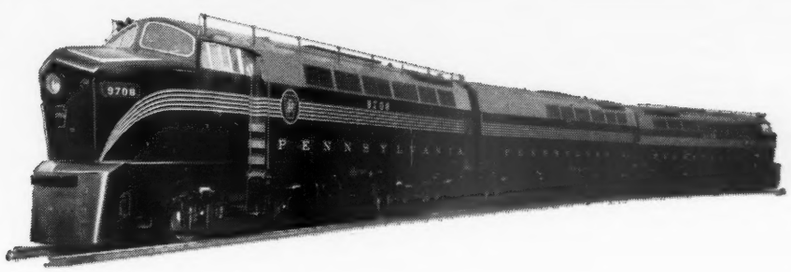




and 10,000 pesos for the best paper on social and working conditions of personnel.

The Pan American Railway Congress Association has also established an award of 25,000 pesos (approximately $1,800) and a gold medal for the paper which is of the most positive benefit toward operation and economy of railroads. This award will be a memorial to Santiago Brian of Argentina, founder of the Pan American railway organization and an "outstanding railroad engineer."

All papers prepared by citizens of the United States, should be submitted in triplicate to Dr. Lewis K. Sillcox, executive vice-president of the New York Air Brake Company, at Watertown, N.Y.

New Ceramic Engineer for A.A.R. Prevention Staff

Frank B. Gibson, who has had 22 years of experience in the ceramic industry, has been appointed ceramic engineer for the Freight Loss & Damage Prevention Section of the Association of American Railroads, with headquarters at Chicago.

A native of Ohio, Mr. Gibson received his B.S. degree in Business Administration at Ohio State University, where he majored in both manufacturing and traffic. His experience includes the positions of plant superintendent and porcelain superintendent. He is well versed in engineering and development of new products, plant layout, and improved methods of production and design. In one particular instance, says the A.A.R., he was responsible for reducing porcelain scrap from 40 cents per cabinet to 3 cents per cabinet on a project involving 250,000 to 300,000 units. During the past war, Mr. Gibson was responsible for production and general assembly of pursuit plane wing panels.

Selected Income and Balance-Sheet Items of Class I Steam Railways in the United States

Compiled from 127 reports (Form IBS) representing 131 steam railways

(Switching and Terminal Companies Not Included)

Income Items	United States For the month of April 1952	1951	For the four months of 1952	1951
1. Net railway operating income	$72,337,896	$72,689,500	$290,939,103	$251,321,650
2. Other income	16,719,771	16,981,617	67,894,066	74,176,407
3. Total income	89,057,667	89,671,117	358,833,169	325,498,057
4. Miscellaneous deductions from income	4,151,064	4,413,152	16,965,392	21,804,309
5. Income available for fixed charges	84,906,603	85,257,965	341,867,777	303,693,748
6. Fixed charges:				
6-01. Rent for leased roads and equipment	10,555,999	10,244,138	39,808,753	37,990,661
6-02. Interest deductions[1]	25,842,338	24,813,195	103,249,632	99,133,911
6-03. Amortization of discount on funded debt	237,755	245,157	957,641	912,534
6-04. Total fixed charges	36,636,092	35,302,490	144,016,026	138,037,106
7. Income after fixed charges	48,270,511	49,955,475	197,851,751	165,656,642
8. Other deductions	2,929,557	3,085,679	11,664,157	12,204,433
9. Net income	45,340,954	46,869,796	186,187,594	153,452,209
10. Depreciation (Way and structures and Equipment)	39,820,844	38,469,824	157,223,854	152,108,363
11. Amortization of defense projects	.....	.....	.....	.....
12. Federal income taxes	38,499,561	40,097,763	192,428,746	166,881,876
13. Dividend appropriations:				
13-01. On common stock	13,409,440	7,856,422	65,820,827	62,825,249
13-02. On preferred stock	2,926,979	1,991,118	30,153,086	46,663,257
Ratio of income to fixed charges (Item 5—6—04)	2.32	2.42	2.37	2.20

Selected Expenditure and Asset Items	United States Balance at the end of April 1952	1951
17. Expenditures (gross) for additions and betterments—Road	$109,493,421	$91,481,362
18. Expenditures (gross) for additions and betterments—Equipment	371,279,629	304,820,444
19. Investments in stocks, bonds, etc., other than those of affiliated companies (Total, Account 707)	478,375,588	477,163,182
20. Other unadjusted debits	84,039,342	113,111,502
21. Cash	799,255,395	820,834,703
22. Temporary cash investments	842,329,196	927,904,105
23. Special deposits	88,232,650	141,789,603
24. Loans and bills receivable	2,422,257	1,736,479
25. Traffic and car-service balances—Dr	56,352,889	58,342,744
26. Net balance receivable from agents and conductors	153,142,528	161,871,667
27. Miscellaneous accounts receivable	476,789,750	470,365,980
28. Materials and supplies	934,972,706	840,155,821
29. Interest and dividends receivable	16,834,480	17,012,276
30. Accrued accounts receivable	213,467,125	227,775,914
31. Other current assets	35,098,672	35,406,627
32. Total current assets (Items 21 to 31)	3,618,897,648	3,703,195,919
Selected Liability Items		
40. Funded debt maturing within 6 months[2]	$184,984,417	$152,862,174
41. Loans and bills payable[3]	2,955,211	3,540,000
42. Traffic and car-service balances—Cr	90,563,114	97,513,318
43. Audited accounts and wages payable	530,847,682	569,004,605
44. Miscellaneous accounts payable	192,702,041	247,660,252
45. Interest matured unpaid	78,026,487	47,535,176
46. Dividends matured unpaid	6,561,906	7,926,089
47. Unmatured interest accrued	68,808,543	66,069,494
48. Unmatured dividends declared	28,680,842	27,243,656
49. Accrued accounts payable	292,142,069	227,473,740
50. Taxes accrued	868,495,860	898,500,119
51. Other current liabilities	83,683,381	86,404,785
52. Total current liabilities (Items 41 to 51)	2,243,467,136	2,278,871,234
53. Analysis of taxes accrued:		
53-01. U. S. Government taxes	704,838,545	743,688,523
53-02. Other than U. S. Government taxes	163,657,315	154,811,596
54. Other unadjusted credits	275,135,373	286,654,764

[1] Represents accruals, including the amount in default.
[2] Includes payments of principal of long-term debt (other than long-term debt in default) which becomes due within six months after close of month of report.
[3] Includes obligations which mature not more than one year after date of issue.
Compiled by the Bureau of Transport Economics and Statistics, Interstate Commerce Commission.
Subject to revision.

Rules for Section 20c Recordings Issued by I.C.C.

Rules and regulations covering procedures for recording documents under the Interstate Commerce Act's new section 20c have been issued by the Interstate Commerce Commission.

The new section was enacted during the closing days of Congress' recent session, the legislation having been embodied in Senate bill 3161. It sets up arrangements for filing with the commission, for recording purposes, of any mortgage, lease, equipment trust agreement, conditional sale agreement, or other instrument evidencing the mortgage, lease, conditional sale, or bailment of railroad rolling stock.

The commission order prescribing the recording procedures and rules was a July 28 order by Division 1. The rules include one which fixes recording fees at $50 for each million dollars, or part thereof, of the indebtedness evidenced by the document filed; and $10 per document for filings such as assignments of rights and amendments to the basic instruments, including any release, discharge or satisfaction thereof in whole or in part. A lease and agreement under the "Philadelphia Plan" will be counted as one document.

Rails May Change Mind On "Barriers"—Knudson

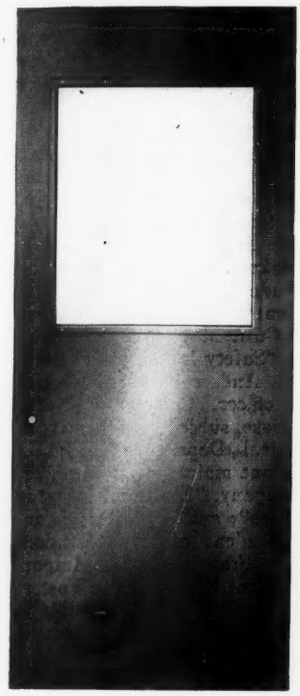
Defense Transport Administrator James K. Knudson thinks the railroads may yet lend support to the highway transport industry's program for liberalizing state laws and regulations limiting sizes and weights of motor vehicles.

Mr. Knudson expressed this view in an August 4 address at Chicago, before the Movers Conference of America. "As the door is opened wider to motor operations by railroads and their trucking affiliates," he said, "it is conceivable that they will be enlisted in support of the efforts to remove at least some highway trade barriers. With a united front, the transport community could anticipate and promote a program of highway and rail modernization keyed to present-day economic needs."

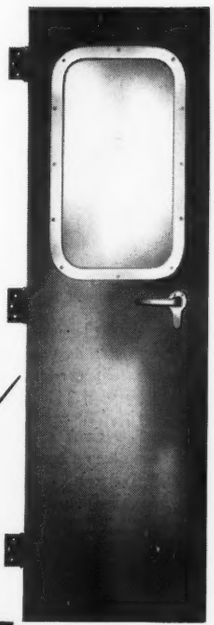
The D.T.A. administrator conceded that uniformity of state size and weight limitations cannot be brought about in the foreseeable future. At the same time he indicated his belief that a "barrier" state's regulations should be eased if they are not required by local conditions such as strength of roads, climate, terrain, and character and volume of traffic.

"Limitations," Mr. Knudson contin-

you show good judgment when you specify MORTON hollow metal DOORS



Passenger Car Vestibule Side Door



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Whenever you are in the market for any type of passenger train hollow metal doors, think *first* of Morton. Old-timers in the railroad field have seen Morton Hollow Metal Doors stand up throughout many years of rugged service. They know that, by any standard, it's just plain good judgment to "specify Morton."

Anti-Pinch Shields

These simple closures prevent injury caused by catching hands between hinge-edge of closing door and jamb. They are easily attached and do not detract from attractive appearance or efficient door operation.

Experience—Morton has earned its unchallenged reputation for leadership over a period of 40 years. Today, as always, we refuse to compromise with quality. Our key mechanics have been on the job with us for many years—their skill and integrity are built into every door built in our plant.

Proved Design—Morton Doors are designed and fabricated to assure exact dimensions as specified. Their design provides *extra strength without extra weight*—a distinct advantage. Interior surfaces are painted in two operations; this makes them highly weather-resistant under all service conditions.

Doors to Suit Your Needs—Passenger train car doors—diesel locomotive cab doors—we are in a position to fabricate them all; we can supply sizes from the smallest locker door to the largest baggage car door! Specify your own metal—aluminum, mild steel, stainless steel—and we'll make the doors you want. Hardware and glass provided if specified.

Cost You Less in the Long Run—Initial costs of Morton Doors are moderate, but that's not the only cost advantage! Replacement and maintenance costs are lower in the long run, thanks to the unexcelled quality which is built into every door we produce.

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ued, "should be designed with a view to the safety, needs, and convenience of *all* users of the highways. Where existing highways are so constructed as to require limitations on truck sizes and weights, the highways should be redesigned and reconstructed (over a term) to conform to traffic needs, instead of reversing the approach and hobbling commerce with horse-and-buggy restrictions."

In other parts of his address, Mr. Knudson discussed "repercussions" of the steel strike, saying that "few enemies could have inflicted more damage than did this 53-day walkout." In the field of transportation, the strike delivered a "body blow" from which the industry "cannot soon, nor easily, recover," Mr. Knudson added.

He went on to report on steps which have been taken, "transportationwise," to "minimize the effects of the strike." Such steps included the arrangement whereby railroads are moving iron ore from the Mesabi range over all-rail routes to steel mills. As the D.T.A. administrator explained it the participating railroads have agreed to establish a pool of "some 6,000" open-top cars for the all-rail movement.

Solid trains, like the "symbol trains" of World War II's oil movement, are being dispatched, and "it is hoped that a rate of 500 cars a day can be reached and maintained," Mr. Knudson also said. This would be 50 cars per day more than the daily movement of 450 cars which had been expected when Mr. Knudson first discussed the plan in a statement he issued July 29 (*Railway Age*, August 4, page 11).

News Briefs . . .

. . . The New York Central has completed an extensive enlargement of its Rockport yard to better handle requirements of industries in Cleveland's rapidly developing southwest section. Nine new tracks have been added, and several existing ones lengthened, C. F. Wiegele, general manager, said. Total new track in the yard approximates 36,000 line feet. A new yard office from which shifting of cars is directed has been constructed and a new 72-ft., 300-ton track scale installed. Cost of the entire project, begun last summer, was "several hundred thousand dollars."

. . . The St. Louis Southwestern is distributing a recorded half-hour radio program, "The Land We Live In," describing the early history and development of its lines, to civic clubs and other local groups as a part of its diamond anniversary celebration. The program, which is entirely devoted to the Cotton Belt, was originally presented over St. Louis station KSD on March 26 by the Union Electric Company.

. . . The last scheduled steam locomotive run on the Bangor & Aroostook took place between Derby, Me., and Greenville on July 22.

. . . Application for a $27-million loan has been filed with the Reconstruction Finance Corporation by the Jersey City Liberty Terminal Corporation, to finance in part construction of a marine, railroad and truck terminal in the Communipaw district of Jersey City, N. J.

. . . Baltimore & Ohio police officers gave safety lectures to 638,295 children and 5,981 adults in 1,698 schools between September 1951 and June 1952. The talks, combined with a showing of the railroad's cartoon safety film, "The Happy Locomotive," were part of a continuing program begun in 1950 which has reached to date over 1.5 million children in more than 4,000 schools along B&O lines.

. . . Believed to be the first arrangement of its kind on any American railroad, a book club program has been inaugurated on the Santa Fe's "Chief" and "Super Chief." In cooperation with the Doubleday Company, the Santa Fe is supplied with a selection of current "best sellers" which are displayed in lounge cars of the two trains for passengers to read during their journey between Chicago and Los Angeles. If a traveler wishes to retain a book after his trip is completed, he may do so by filling out a book plan membership slip furnished by the lounge car attendant.

. . . Professor William Way, Jr., head of the University of Tennessee's Transportation department, has received a "Special Plaque" award from Delta Nu Alpha, national transportation fraternity, "in recognition of distinguished service over a period of years in the development and promotion of education in the field of traffic and transportation."

. . . A 46 per cent boost in suburban fares and discontinuance of off-peak suburban trains on its two Chicago suburban lines is being sought by the Milwaukee in a petition filed with the Illinois Commerce Commission. The road estimates it will incur an operating loss of $1,441,000 in the year 1952 on its suburban services if present schedules and fare levels are continued.

. . . The Northern Pacific has been cited by the Minnesota Safety Council "in appreciation of outstanding safety service." The NP's employee safety program, under direction of C. T. Dewitt, superintendent of safety, has effected a sharp decrease in reportable injuries in the past seven years.

ORGANIZATIONS

Safety Council's Railroad Section Meets Oct. 20-24

Two railroad presidents are among the speakers scheduled to address the Railroad Section of the National Safety Council during the 40th National Safety Congress to be held in Chicago on October 20-24. H. J. McKenzie, president of the St. Louis Southwestern, will speak on a president's concepts of safety, and T. D. Bevan, president of the Elgin, Joliet & Eastern, will tell of "Safety's Place on the Railroads."

Other speakers who will address the section include C. M. House, general superintendent motive power and car equipment, Gulf, Mobile & Ohio, who will talk on "Safety in Diesel Maintenance"; G. R. Anderson, assistant chief mechanical officer, Chicago & North Western, whose subject is "Safety in the Mechanical Department"; J. W. Limbrock, plant maintenance engineer, Pullman Company, "Electrical Hazards in Maintenance"; and H. W. Hale, general superintendent of transportation, St. Louis-San Francisco, "The Importance of Accident Prevention in Fostering Good Public Relations."

All sessions of the Railroad Section will be held in the Morrison Hotel in Chicago.

The following were among those elected to the board of directors at the recent biennial convention of the **National Travelers Aid Association:** G. Murray Campbell, vice-president of the Baltimore & Ohio at Chicago, and president of the Chicago T.A. Society; and Larry H. Dugan, vice-president of the Chicago, Milwaukee, St. Paul & Pacific, at Seattle, Wash.

Miss Helen Richardson, of the Association of American Railroads, has been elected president of the **Washington, D.C., Chapter, Railway Business Women's Association,** for the coming year.

Other new officers include Miss Gertrude Yearout, Pennsylvania, vice-president; Miss Agnes Sheffield, Southern, corresponding secretary; Miss Dixie Goucher, American Short Line Railroad Association, recording secretary, and Mrs. Mildred Schneider, Washington Terminal, treasurer.

The **Women's Traffic Club of Metropolitan St. Louis** has begun its 19th year of operation with the following newly elected officers: President, Ann O'Brien, secretary to traffic manager, Hunter Packing Company; first vice-president, Marie Kamuf, Universal Carloading & Distributing Co.; second vice-president, Louise Gauchat, Balsano Fruit & Produce Co.; recording secretary, Mabel Sigman, Greyhound Lines; corresponding secretary, Pauline Cafferata, American Waste Ma-

PART	MATERIAL
Axles	C-V steel Cr-V (SAE 6145) steel Mn-V steel
Bolts	Cr-V (SAE 6135) steel Mn-Cr-V steel
Brake Rigging Castings	Mn-V cast steel
Commutator Spider Castings	Mn-V cast steel
Connecting Rods	Cr-V (SAE 6135) steel Cr-V (SAE 6140) steel
Couplers	Mn-V cast steel Ni-V cast steel
Crankcases	Mn-Mo-V cast steel Mn-V cast steel Mn-V plate steel
Crankshafts	Cr-Mo-V (4140+V) steel Ni-Cr-Mo-V (4340+V) steel Cr-V (6140) steel C-V (1045+V) steel Low Cr-V (50T46) steel
Cylinders	Cr-V cast iron
Cylinder Heads	Mo-V cast iron Ni-Mo-V cast iron
Cylinder Liners	Cr-Mo-V cast iron Mo-V cast iron
Engine Block Bases	Mn-V plate steel
Equalizers	Mn-V steel
Exhaust Manifolds	Cr-Mo-V iron
Gears and Pinions	Cr-V (SAE 6145) steel
Injector Tips	Cr-V (SAE 6145) steel
Oil Pan Beds	Mn-Mo-V cast steel Mn-V cast steel Mn-V plate steel
Pistons	Mo-V cast iron Ni-Cr-Mo-V cast iron Ni-Mo-V cast iron
Piston Pins (Wrist Pins)	Cr-V (AISI 6120) steel
Rocker Arms	Cr-V (SAE 6135) steel Mn-V cast steel
Rocker Arm Brackets	Mn-V cast steel
Rocker Arm Shafts	Cr-V (AISI 6120) steel
Springs	Cr-V (AISI 6150) steel Cr-Mo-V steel Cr-W-V steel
Truck Frames and Bolsters	C-V cast steel Mn-Ni-V cast steel Mn-V cast steel Ni-V cast steel Mn-Mo-V plate steel Mn-V plate steel

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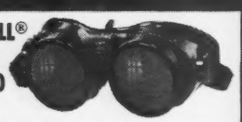

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terial Corporation; financial secretary, Millie San Filippo, Mohawk Motor Lines; treasurer, Mildred Beckman, McDonnell Aircraft Corporation; director (industry), Irma Schnuck, Kilgen Organ Company; and director (transportation), Marie Roosmann, Missouri Pacific.

The Washington, D.C., chapter of the **National Railway Historical Society** has planned a rail excursion to Luray, Va., on October 5. Tickets are available from Herbert L. Chase, 1615 Franklin street, N.E., Washington 18.

At a recent meeting of the **Railway Business Women's Association of San Francisco** the following officers were installed: President, Elsie Petterson, librarian, Southern Pacific; vice-president, Frances Croy, Chicago, Milwaukee, St. Paul & Pacific; recording secretary, Irma Piver, Western Pacific; corresponding secretary, Sarah Mueller, Railway Express Agency; and treasurer, Dora Buckingham, WP.

Military Railway Service Veterans will hold their seventh annual reunion at the Hotel New Yorker, New York, September 19-20. All veterans who served in the Military Railway Service during World War II are invited. Speaker at the dinner on September 20 will be Col. Sidney H. Bingham, chairman of the Board of Transportation of the City of New York, who will discuss "The Bingham Formula *versus* Nationalized Transport." Gen. Carl R. Gray, Jr., administrator of the U.S. Veterans Administration, wartime head of M.R.S., will preside. Director-general of the organization is R. E. Godley, assistant manager of stores of the Illinois Central, at Chicago. Secretary-treasurer is Carl N. Rydin, president of the Rydin Railway Equipment Company, of Chicago.

The **Transportation Club of Louisville** will hold its annual stag outing on August 20, at the Club Idle Hour, opposite Lake Louisvilla, on State Highway 22. The outing will start at 1 p.m., with dinner at 6:30 p.m.

The fall meeting of the **New England Shippers Advisory Board** will be held at the Mount Washington Hotel, Bretton Woods, N.H., on September 17, 18 and 19.

W. C. Sommers, general freight agent of the Pennsylvania, has been elected president of the **Traffic Club of Pittsburgh.**

Other officers elected are: First vice-president, H. A. B. Brown, general freight agent, New York Central; second vice-president, W. G. Felton, assistant general traffic manager, Pittsburgh Steel Company; third vice-president, W. W. Larkin, traffic manager, Continental Foundry & Machine Co.; secretary, O. M. Moore, retired, formerly with the New York, Chicago & St. Louis.

ABANDONMENTS

Application has been filed with the I.C.C. by:

COLORADO & SOUTHEASTERN.—To abandon its entire line, from Delagua, Colo., to Ludlow, 4.9 miles. Coal mines served by the road have been closed permanently.

DETROIT, CARO & SANDUSKY.—To abandon its entire line, approximately 31 miles of main line and 4.2 miles of side tracks, between Sandusky, Mich., and Caro.

ILLINOIS TERMINAL.—To abandon a 15.3-mile line from Alton, Ill., to Grafton. The road said revenues have not been sufficient to meet costs of operating the segment. A 2.5-mile portion at Alton would be retained as a switching and industrial track.

SUNCOOK VALLEY.—To abandon its entire line, approximately 22.9 miles, from Bow Junction, N. H., to Pittsfield. An additional two-mile segment, from Concord to Bow Junction, is operated under trackage rights from the Boston & Maine. This operation also would be abandoned.

Division 4 of the I.C.C. has **authorized:**

APALACHICOLA NORTHERN.—To abandon approximately 200 feet of its own trackage at Port St. Joe, Fla., and to abandon operation over another 4,400 feet owned by the St. Joe Paper Company. The trackage will not be removed, but will become private industry track.

ARTEMUS-JELLICO.—To abandon its entire line, approximately 11.4 miles, from Artemus, Ky., to Anchor. Coal mines served by the road have been abandoned.

COLORADO & SOUTHERN.—To abandon 1.9 miles of branch line, from Acme Junction, Colo., to Aguilar. The line served coal mines, most of which have gone out of business.

ILLINOIS CENTRAL.—To abandon approximately 1,000 feet of connecting track, and operation over an additional 3.16 miles of private mine track, all in Saline county, Ill. A coal mine served by this trackage has ceased operations.

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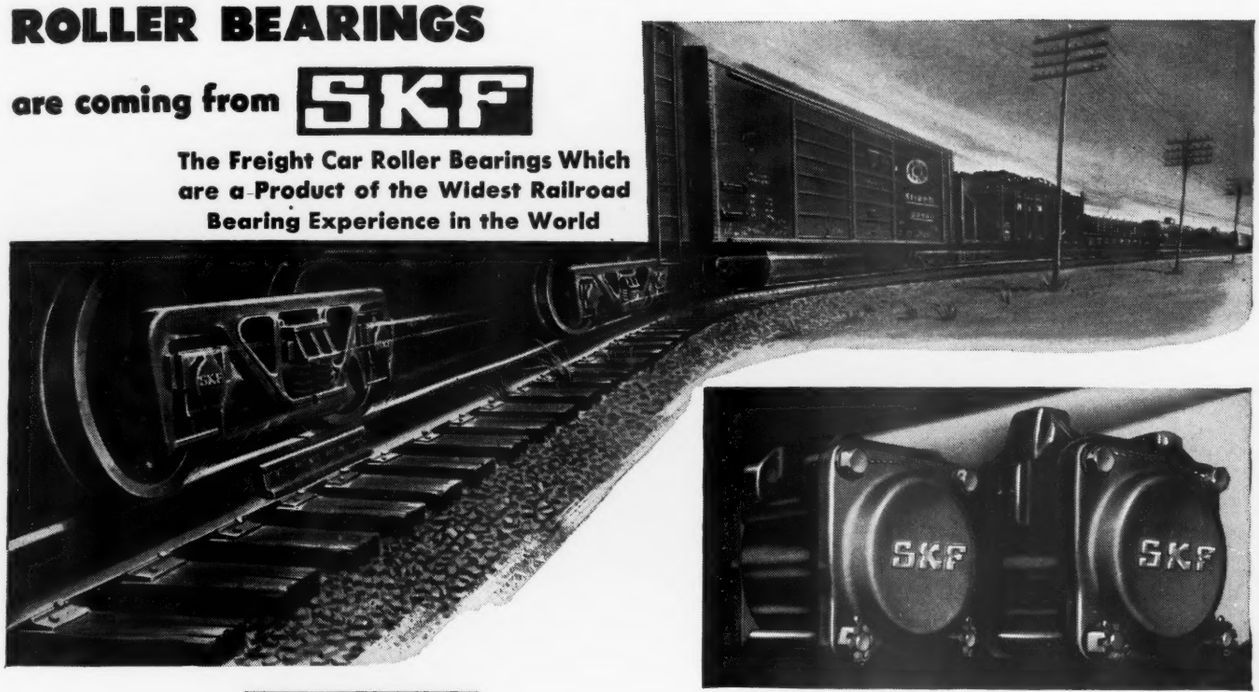

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- ***5th of* EIGHT — Longest bearing life.**
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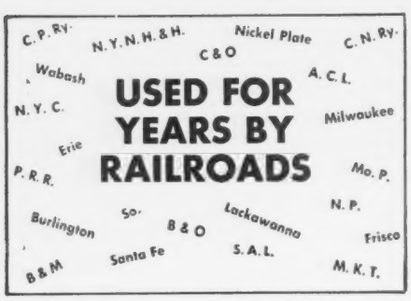

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Current Publications

BOOKS

Transportation Principles and Problems, by Truman G. Bigham and Merrill J. Roberts. Second Edition. 710 pages. McGraw-Hill Book Company 330 W. 42nd st., New York 18. $6.

The second edition of this book, like the first, deals with the economics of transportation in the United States. Its primary objective is to promote informed, judicious thinking about transportation problems and policy. It gives special attention to the needs of teachers and students in universities and colleges, but is directed also to any mature reader interested in the economic aspects of transportation. The first edition's functional approach, with its joint treatment of all modes of intercity transportation and emphasis on interagency relationships, has been retained, but the book has been thoroughly revised. Some of the old chapters have been combined, others have been redistributed, and all have been brought up to date. In general, the amount of detailed, factual material has been reduced, in order to leave more space for analysis of principles and problems. Further stressed are the effects of transportation upon industrial location, the relationships between rates and prices, organization for wartime operation, the nature and use of transportation statistics, the place and functions of the Interstate Commerce Commission, the influence of competition upon rates, coordination and integration, labor disputes, public aids and national transportation policy.

Taxation of the Trucking Industry, by Richard W. Lindholm. 141 pages. Bureau of Business Research. College of Commerce and Administration, Ohio State University, Columbus, Ohio. $3.

This study has as its purpose the examination of taxes paid by the trucking industry. It surveys the development of the industry, the different types of taxes paid, geographical and intra-industry variations of tax burdens, and attitudes of leaders of the industry toward different taxes paid. The data upon which the study is based are taken, for the most part, from published reports of the Interstate Commerce Commission, and from unpublished records in the files of the commission. Tables give financial and tax data for five segments of the trucking industry—household goods, heavy machinery, liquid petroleum, motor vehicles, and retail store delivery—for the United States as a whole, and by geographic regions, and are herein published for the first time.

Railroading in New Jersey, by John T. Cunningham. 107 pages, illustrations. Associated Railroads of New Jersey, Room 274, Pennsylvania Station, New York 1. Free.

This book is based on the series of 17 articles on railroad history and development in New Jersey which appeared in the Newark Sunday News from January 7, 1951, through April 29, and which were noted in the "Current Publications" column of *Railway Age* for August 20, 1951, page 81. The Associated Railroads of New Jersey have converted the series into an attractive book which will be well-received by the railroad public.

PAMPHLETS

Agricultural Motion Pictures. Four pages, illustrations. Agricultural Development department, Union Pacific, 1416 Dodge st., Omaha, Neb. Free.

A summary of eight sound and color 16-mm. motion pictures produced under the direction of the UP's agricultural development department and available for showing to schools, civic organizations, farm groups, etc. Illustrations show the opening titles, while an accompanying description tells the running time and major "theme" of each picture. Also listed briefly are eight other UP films on travel and safety subjects that are similarly available for free showing.

Directory of American Council of Commercial Laboratories, Inc. 1952 Edition. 73 pages. American Council of Commercial Laboratories, Inc., 4302 East-West Highway, Washington 14, D. C.

This guide to the leading independent testing, research, and inspection laboratories of America lists alphabetically the individual laboratory statements of organization, services, specialties, etc. It contains a personnel index and a geographical index of the laboratories.

Canada Descriptive Atlas. Illustrations. Department of Citizenship and Immigration, Ottawa, Ont. $1.

Leading off with a general description of Canada, its physical features, climate, industries, population, government, history, etc., the following sections give similar data for each of the ten provinces and territories.

Nomenclature; A Glossary of Terms for Aluminum Sheet and Plate and Aluminum Extruded and Tubular Products. 20 pages. Aluminum Association, 420 Lexington ave., New York 17.

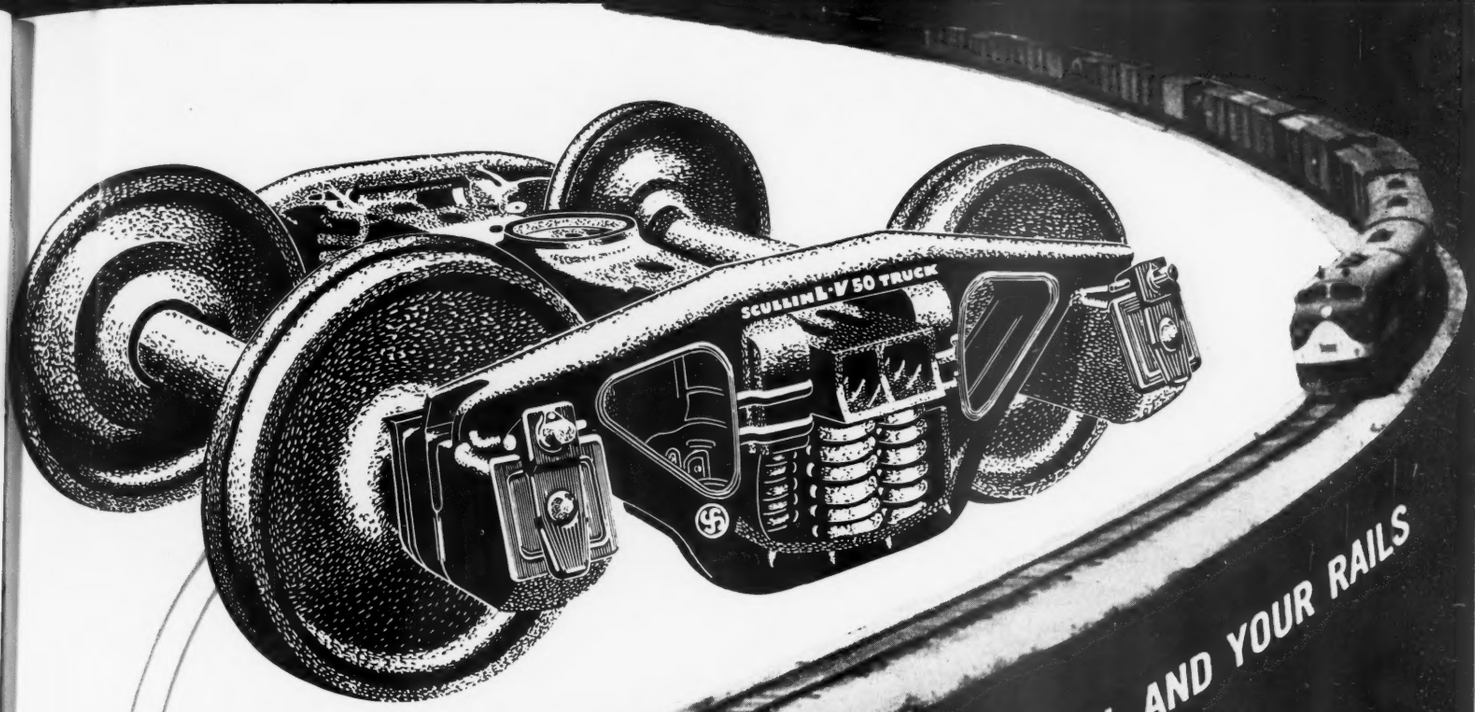
Covers definitions and miscellaneous terms applicable to sheet and plate products and to extruded and tubular products.

In the Maine Woods. 84 pages, illustrations, maps. Publicity department, Bangor & Aroostook Railroad, Bangor, Me. 25 cents.

This fully—and enticingly—illustrated booklet is primarily a description, in words and pictures, of the recreational facilities of the northern Maine territory served by the B&A. It covers such alluring activities as fishing, hiking, hunting, canoeing and photography. It includes a digest of Maine's 1952 fish and game laws, and a detailed directory, including locations and rates, of hotels, camps and cottages "in the Maine woods."

Precision—A Measure of Progress. 63 pages, illustrations. General Motors Corporation, Educational Relations Activity, Detroit 2, Mich. Available in limited quantities to teachers, libraries and other educational institutions.

This new educational booklet traces the development of measuring devices from the time of Noah to today. Citing the necessity for precision measurements to-



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day, the foreword says "In mass production industries, where things are made by the millions, measurements have to be 'on the nose.' Rulers and yardsticks were all right for the horse and buggy days, but now many dimensions have to be accurate within thousandths of an inch, and sometimes even millionths. Why? Because mass production is based on interchangeability, which, in turn, demands that everything fit together just right." The pamphlet explains the origin of the inch, foot, yard and other measurements, as well as the basis for the metric system. A glossary of weights and measures and several useful conversion tables are included.

Applications of Electricity to Railways, 1951. Prepared by Edmund A. Freeman. 43 pages. Library, Bureau of Railway Economics, Association of American Railroads, Transportation bldg., Washington 6, D. C. Free.

A bibliography of articles on railroad electrification, diesel-electric and electric locomotives, and electrical apparatus and equipment appearing in a selected list of periodicals. Bibliographies on communications and signaling appear in appendices.

Share Ownership in the United States. 140 pages, tables, charts, appendices. A study prepared at the request of the New York Stock Exchange by the Brookings Institution, Washington 6, D. C., under the direction of Lewis H. Kimmel.

This is believed to be the first comprehensive analysis ever attempted of the ownership of private industry and the composition of the share-owning population. It shows "that vast numbers of people have a direct stake in the ownership of business enterprises"; and that, in addition to ownership of stocks, "the general public has a substantial interest in the operation of corporations by virtue of ownership of bonds and other credit instruments—both directly, and indirectly through holdings of life insurance and savings accounts." There are, the study developed, approximately 6,500,000 individual owners of publicly held stock issues in the United States. They are members of 4,750,000 family units. One in every 16 persons in the adult population owns shares in at least one stock issue, and there are one or more share owners in every tenth family.

The Story of the Historical Development of the Economic Regulation of Transportation, by Charles W. Braden. 28 pages. National Distillers Products Corporation, 120 Broadway, New York 5. Free.

Mr. Braden traces the development of transportation regulation from the days of Adam Smith and his "Wealth of Nations" down through the industrial revolution and the Grange movement and what was popularly termed "The Farmer's War Against Monopoly," which provided the motive for regulation of railroads by enactment of the Act to Regulate Commerce in 1887, closely followed by enactment of the Federal (Sherman) Anti-Trust Act in 1890. Court decisions which influenced passage of the Act to Regulate Commerce, and related regulation, both prior to, and since its passage, are also discussed.

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